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AS TO FOODSTUFFS, DUTY DEMANDS THAT THE ALLIES BE CONSIDERED FIRST, OURSELVES SECOND.

IT was but a few weeks ago that President Wilson
and Mr. Hoover were assuring the country that
we had "abundant crops" for all our needs if we
but conserved food for our Allies, in the face of the
fact that the actual figures of crop production
showed that the supply of food was dangerously
short even for our own needs.

But now Mr. Hoover in a statement issued a few
days ago in regard to the wheat supply said:

As to wheat, we have already exported the whole of
the surplus of the 1917 harvest, over and above the
normal demands of our own population. It is neces-
sary, therefore, for the Food Administration to restrict
the export of wheat, so as to retain in the United States
sufficient supplies to carry our own people until the
next harvest. Therefore, all exports of wheat from
now forward are limited entirely to the saving made by
the American people in their consumption of wheat.
We are continuing wheat shipments for December as
far as our situation allows, but even with all the con-
servation made, we are still unable to load over 400,000
tons of foodstuffs urgently required by the Allies during
the month of December alone.

It is unspeakably selfish folly to consider our needs
as separate and distinct from the needs of our Allies.
They are not only our brothers in arms, but they
are our defenders, and they have saved us from ruin.
If this nation should think of its own needs first and
of the needs of the Allies second, it would deserve
defeat.

Saved as we have been during the last three years
from the awful sufferings endured by the Allies in
defending civilization we ought now to be all the
more eager to extend to the Allies, not that which
we can save from our own needs, but to the extent
of their needs let ourselves be wholly secondary.

Mr. Hoover's statement merely sustains the position
which the MANUFACTURERS RECORD has taken
for the last twelve months, and which it has again
and again emphasized since last spring when the
crop indications showed that we were certain to
have a small wheat yield. With only one-third of
the crop year gone, our total surplus of wheat over
and above our normal needs, according to Mr.
Hoover, has already been exported, and if we con-
tinue exports to the Allies we can now only send
such as may be saved from our own consumption by
conservation.

We believe that the Government should take the
position that it will feed the Allies first and fore-
most, and that the American people shall willingly,
if the spirit of self-sacrifice is sufficiently developed,
do with very much less wheat bread than formerly,
or that they shall be forced by law to do with less
if they do not willingly make the sacrifice.

Every man and woman in this country who con-
sumes more food than is needed is to the extent of
his or her ability helping to starve the Allies and
to bring defeat to our own army as well as theirs.

As the writer has watched the supreme selfish-
ness of American men and women at hotel tables
and elsewhere, he has been utterly amazed at the
disregard of any spirit of self-sacrifice in the use of
wheat bread, of meats and of sugar. Because people
have been accustomed to eating freely of these
things, they continue to eat freely of them. If seated
at a hotel table they find bread and sugar and butter

available, and the man who has used two or three
lumps of sugar seems to feel no compunction in con-
tinuing to do it so long as the sugar bowl is in his
reach, and the same is true as to his demand for
bread and butter and meat.

The spirit of self-sacrifice has not yet entered into
our hearts as a nation. There are many millions of
American people who are giving up things which a
year ago they would have considered absolutely es-
sential, and yet there will be found all around them
people professing to be patriots who are not in the
 slightest conserving foodstuffs. It looks as though
the only way this situation can be adequately met is
by rigid Government regulation, limiting the amount of
certain foods, as is done in England. When some
men and women, out of a desire to serve others un-
selfishly, conserve food in every possible way only
to find that all around them other men and women
are absolutely refusing to do so, and are indifferent to
the whole situation, they can only feel that their
sacrifice is to a large extent in vain.

Recently the writer heard a very thrilling address
to a religious body on the need of conserving flour
and meats and sugar, and in a few moments there-
after a minister who sat within a few feet of the
speaker was so little moved to a realization of the
fact that he must personally conserve these things,
that he emptied into his coffee cup far more sugar
than could possibly be dissolved, leaving a great pile
of useless sugar in the bottom of the cup, and it
apparently never occurred to him that he was dis-
regarding the world's call for sacrifice. Over and
over again we have seen other people doing the same
thing. And the man who has either entirely cut out
the use of sugar from coffee or largely reduced it
finds all around him others who have never changed
in the slightest the amount of sugar consumed.
Similar conditions prevail as to the use of wheat
bread. Some people openly declare that they do not
care for cornbread, or oatmeal bread, but that they
must have their wheat bread. Where the question
of health is involved the use of certain foods may be
justified, but where the question of appetite is con-
sidered no human being can be justified these days
in putting appetite first and conservation second.

Mr. Hoover's statement doubtless came as a sur-
prise to many people who, by reason of the over-
optimistic statements which have been put out so
freely by the Department of Agriculture, and which
have been accepted by President Wilson and Mr.
Hoover, as shown by their public utterances, had
been led to believe in an abundance of food supplies.
The conditions which Mr. Hoover now indicates as
prevailing in the wheat supply promises to be
duplicated in other foodstuffs, especially of meats,
and the nation must learn, and learn quickly, that
only the most rigid conservation of food and the
most abundant production of food next year will
save this country from a shortage of food so great
that bread riots and socialistic and anarchistic agita-
tion would be inevitable.

Any effort to disguise this fact will react to the
great injury of the nation. The American people
must be taught the facts and they must learn to
face the truth. Had the American people not been
lulled to sleep by the peace propagandists who for
more than two years refused to see the truth, we
would not now find it so difficult to arouse the nation
to the magnitude of the task we have undertaken,
nor would the dangers of the situation be so intense.
If we should make the same mistake in creating a
false impression as to the food supply of the country,
it would be too late next spring and summer to
tell the country that it had been misled by false or
even by inadequate statements put out for the pur-
pose of creating optimism rather than of showing
the American people that they must face the real
issue.

This Nation's Business Is to Win The War

THE CAPTURE OF JERUSALEM.

WHAT a thrill of joy went through all Chris-
tendom last Monday when the announcement
came that Jerusalem had passed from the control of
infidels, who have held it for centuries, to England!
May that happy event be an augury that the world
is to be redeemed from the damnation which Ger-
many has sought to impose upon it!

As the English soldiers moved into the Holy City,
what marvelous inspiration must have filled their
hearts as they trod its sacred streets and realized
that the holiest spot on earth had at last been re-
deemed from the curse of Moslem rule! Surely we
are living in the only really great momentous hour
since the Son of God walked the streets of Jeru-
salem and upon Calvary's cross died that men might
live.

Jerusalem, Jerusalem! May thy capture mark
the turning point in the world's salvation from Ger-
many's atheistic barbarism!

THE CANADIAN HORROR THE OUTCOME OF GERMANY'S WAR.

TO Canada, our companion in arms, our neighbor
and our closest friend, the sympathy of this
nation goes in unstinted measure because of the
awful horrors of the Halifax explosion. Even if no
individual German was guilty of that explosion,
Germany itself is guilty, and every agonized heart
and every death and every maimed man, woman
and child was as directly due to Germany's work as
was the sinking of the Lusitania. Germany's fear-
ful war upon the world is responsible for the Hall-
ifax horror, and in reckoning up the sum of suffer-
ing and sorrow we should remember that this fear-
ful tragedy was merely another outcome of the
"Made-in-Germany" hell which has been turned
loose upon earth.

HOW LABOR SUPPLY CAN BE INCREASED, VICTORY IN WAR HASTENED

AND HUNDREDS OF THOUSANDS OF SOLDIERS KEPT FROM DEATH AND BILLIONS OF MONEY SAVED.

We face a great shortage of pig-iron, indeed a famine, with consumers eagerly scrambling for iron without finding an adequate supply.

We have a coal famine upon us, with schools, churches, domestic consumers, industrial plants and iron furnaces unable to secure supplies equal to their immediate pressing needs.

We have a wood famine, and with vast forests of timbers available it is difficult at times to secure even a supply of kindling wood regardless of price.

Our food production is wholly inadequate to our own needs, and farm labor is inadequate to increase the output sufficient to meet the urgent call for grain and meat.

Transportation facilities by rail and water and highway have practically collapsed as measured by the needs of the times, and billions must be expended to increase transportation, or else all other things that we do will be in vain.

The world's shipping has been submarine to a fearful extent, and the ships that have escaped this hell-devised weapon of murder are being overstrained and overworked.

We must build ships to the utmost stretch of our power regardless of cost.

We must push iron and coal production to the last limit of our capacity, and to do this new coal and ore mines must be opened, new furnaces built, new coke ovens constructed, and existing plants must be crowded even to the danger point of overwork that the present situation may be relieved.

Shipbuilders are calling for timber and steel and laborers; the world is begging for more food and must keep on pleading for meat and bread long after the war has ended. Coal mines are short of labor, furnaces and steel works and lumber-yards are hampered for lack of labor. Civilization and our existence as a free nation hang in the balance for lack of labor.

An ample supply of labor working regularly and efficiently would solve every problem of increased coal output, of more rapid shipbuilding and of larger food production, and would greatly help to settle the labor question as it affects the expansion of transportation facilities.

There is a way in which this labor problem can to a very large extent be solved to the enormous benefit of the laborers, to the increased efficiency of everything that makes for the welfare of the nation, to the protection and safeguarding of our soldiers, and to our ability to win the war.

To fail to use such means would be an unspeakable crime against our soldiers; it would mean the unnecessary death of hundreds of thousands who otherwise would be saved, the expenditure of many billions more than would be needed if we should adopt this measure; it would mean the lengthening of the war and privations in the way of lessened food and fuel for a hundred million people.

Has the nation the courage to meet the issue?

Dare the President and his advisers and Congress refuse to do that which would mean so much for humanity, while the failure to do it would be a crime against Heaven and earth?

The solution of the problem is to be found in national prohibition of the manufacture, sale and distribution of alcoholic drinks of every kind as a necessary war measure.

This would save the \$2,000,000,000 to \$3,000,000,000 now wasted in drink.

Seventeen Hundred Coal Operators Unanimously Appealed to National Government for Protection from Liquor.

Climax Coal Co.

Shamrock, Ky., December 7.

Editor Manufacturers Record:

Relative to national prohibition, we have read with interest the extract from your paper of November 22, and we agree with you, and know of nothing that we could add to make this matter plainer.

There has been prohibition for two years in this

county, but we are overrun with bootleggers, but even at that we are considerably better off than we were under open saloons. There are two factors in favor of prohibition around mines. One is, the men are much more regular at their work. The other is, that a sober man is not near so liable to personal injury as one whose brain is befogged with liquor.

At a meeting of the National Coal Operators' Association at Pittsburgh in October a resolution was passed unanimously asking the Government to prohibit a saloon within five miles of a coal mine. There were 1700 operators present from all over the United States.

We trust that you may be able through your paper to bring this matter more forcibly to the attention of everyone concerned.

CLIMAX COAL CO.,

By R. E. HOWE, Vice-President and Treasurer.

Efficiency of Labor Would Be Increased.

The American Coal Co. of Allegany County.
McComas, W. Va., December 6.

Editor Manufacturers Record:

In my opinion, the efficiency of labor would be mate-

rially increased if complete prohibition for the entire country were put into effect.

Liquor drinking among coal miners is a curse which State laws apparently cannot entirely stop. We have prohibition in this State, yet our miners, by hidden channels, get the liquor.

The only way to stop its use effectually is to stop its manufacture.

J. H. PARROTT, General Superintendent.

Opposed to Drink and Refuse to Let Men Under Influence of Drink in Mines, But Still Do Not Seem to Favor Prohibition.

The Broad Top Coal & Mineral Co., Huntington, Pa., December 7.

Editor Manufacturers Record:

Personally, the officials of this company are strongly opposed to the use of alcoholic drinks, but to be frank about it, we cannot cite an instance where this has interfered with the operation of our business.

We allow nobody under the influence of liquor to enter our mines or plant, and during the last year we discharged one man for violating this rule.

Our men have drink in their houses, which we permit, but they are warned that no parties or disturbances will be tolerated. We do this because they will have it, anyhow, and if they cannot have it we fear they will get a worse substitute.

THE BROAD TOP COAL & MINERAL CO.

Prohibition a Great Benefit.

The Alabama Company, Birmingham, Ala., December 7.

Editor Manufacturers Record:

Answering yours requesting our views as to the effect on the operation and output of our plants, and the country at large, if complete prohibition should be enacted as a war measure.

Ever since the incorporation of this company this State has had either a prohibition law or local option, which precluded the sale of liquor except in the larger cities, and from an economical standpoint I do not hesitate to state that I consider it has been of great benefit to this company in the efficiency of its labor. Being without experience as to these operations under different conditions, I am not in position to advise you as to what extent this benefit exists.

H. W. COFFIN, Vice-President.

Absolute Prohibition Would Help—Car Shortage Makes for Loafing.

Cabin Creek Consolidated Coal Co., Kayford, W. Va., December 7.

Editor Manufacturers Record:

Replying to your letter of December 4, asking my views as to the effect of prohibition during the war would have on our operation of coal.

The prohibition laws of West Virginia have already given us a chance to make a comparison between operating with and without "booze," as the law is fairly effective on Cabin Creek. However, I am of the opinion that a uniform law throughout the country might serve to further improve the conditions.

At present liquor may be obtained in Kentucky, and, with a great advance in wages, quite a small army travel to those oases every pay-day, losing a day or two, even if they get back, and quite frequently they are detained. Under the law a quart may be brought back, and generally is, but this is soon consumed.

I think we would be safe in concluding that an absolute prohibition, while it would not affect those naturally averse to work, would nevertheless make more steady the many whose only fault is laying off for a pay-day drunk.

While irrelevant, I cannot forbear remarking that the plans of the Government for keeping our men sober and industrious will avail little if the railroad cannot furnish cars to take advantage of improved conditions. So far as efficiency is concerned, a man who is forced to loaf might as well be drunk as sober, and at present the C. & O. can furnish but half a car supply.

JOSIAH KEELY, General Manager.

Labor's Efficiency Would Be Greatly Increased.

Coalburgh-Kanawha Mining Co.,

Coalburgh, W. Va., December 7.

Editor Manufacturers Record:

We think national prohibition under rigid Government regulations would greatly increase the efficiency of all labor.

As our State is "dry," we would not be affected at our individual operation.

J. A. WILLIS, Secretary and Treasurer.

generally. With us we have prohibition, and we are only affected to a small extent, comparatively. There is some illicit distilling in our vicinity, and there is some drunkenness with our employees, but such cases are infrequent.

LEO LONG, Vice-President.

National Prohibition Would Materially Aid in Winning the War.

Broadway Coal Mining Co.,

Memphis, Tenn., December 8.

Editor Manufacturers Record:

In my opinion, there is absolutely no doubt that present restrictions on the handling of liquor, which makes it very inconvenient and difficult in our territory to obtain, has worked very advantageously both for the good of our people and the prevention of idleness and the lack of restlessness, bad order and unhappiness. I think that if we could secure national prohibition during the war it would, in my opinion, aid materially in the winning of the war, for it would make available much good labor that is rendered useless by intoxicants, and I sincerely hope that our Government will discontinue the manufacture of this material indefinitely.

WM. M. SIMMONS, President.

One Man Who Thinks It Unfair to Brewers to Stop Their Trade, Though Fair to Distillers to Kill Whiskey

Alabama & New Orleans Transportation Co.,

New Orleans, La., December 6.

Editor Manufacturers Record:

Replying to your letter of the 3d inst., with reference to absolute prohibition under rigid Government regulations as an economic war measure.

While we are heartily in favor of the absolute prohibition of the sale of whiskey and wine during the war, we feel that the manufacture and sale of beer should be permitted, as its immediate stoppage would be too drastic and entirely unfair to the brewery interests. If the whiskey drinkers of this country will switch to beer, the evils of their drinking will be felt much less, and at the same time it will help to enforce other prohibition measures that would be very difficult to enforce if we had absolute prohibition.

J. L. BRIERTON, Manager.

No Doubt That National Prohibition Would Increase Efficiency.

Beaver Run Coal Co.,

Philadelphia, Pa., December 6.

Editor Manufacturers Record:

We heartily endorse all you say in your reprint from a recent editorial on banishing the liquor industry for the duration of the war. There is no doubt in our mind that national prohibition as a war measure would increase the efficiency of labor.

BEAVER RUN COAL CO.,
By W. O. C.

What National Prohibition as a War Measure Would Achieve.

Blue Creek Coal & Land Co.,

Charleston, W. Va., December 7.

Editor Manufacturers Record:

Your letter of the 4th in regard to national prohibition has been received and is interesting to the writer.

Being located in a prohibition State, possibly my opinion would be considered biased, but I will answer your inquiry in this way. If the abolition of the manufacture and selling of liquor does for the nation what it has done for West Virginia, there is no question in my mind that the efficiency, soberness and clear-mindedness derived therefrom would bring this terrible struggle to an earlier end.

May I suggest that it would not only aid labor, but in equal proportion business men, whose efforts and time are limited by its use.

It is with much pride that we speak of our own employees. They are faithful to their work and good, loyal American citizens. They contribute liberally to

Increased Efficiency and Larger Labor Supply by Prohibition.

Clinchfield Coal Corporation,

Dante, Va., December 8.

Editor Manufacturers Record:

In our opinion, absolute prohibition would result in increased efficiency and a more regular supply of labor

all the causes presented—the Red Cross, Y. M. C. A. War Fund and Liberty Loan issue. Out of 200 employes at one mine 150 were subscribers to the last Y. M. C. A. War Fund. I do not know whether prohibition has brought about this favorable condition, but my personal belief is that it has gone a long way towards attaining that end.

National prohibition as a war measure properly enforced, to my mind, would bring about such a favorable condition in this country that the liquor question would be settled for years to come.

It was with much satisfaction that I read your article in the MANUFACTURERS RECORD on November 27, 1917.

SAMUEL G. SMITH.

Sober Men Only Are Efficient Workers and Owners of Homes.

WM. H. BALDWIN, Shipyard, Steam Marine Railway, Steam Saw and Planing Mill, New Baltimore, N. Y., December 6.

Editor Manufacturers Record:

Referring to your letter and inquiry relating to alcoholic drink, also concerning the effects of labor and all concerned, first, I want to explain to you the effect it has had on my business here. We have been dry here for one year. Some of my men, I am sorry to say, are drinking men; heretofore they did not begin to make the time that they have for the past year, for since it has been dry they are better workmen, more capable and efficient in their work. Quite a number of my sober men own nice homes of their own, all from earnings from their trade on the shipyard and all new business. On the other hand, I do not know of one drinking man that has provided a home for self and family. From my 40 years of business life it is best, in my opinion, and for all concerned and all business, of whatever nature or kind, to cut out the rum element. Everything would be far better and safer in the hands of sober men, for they are more efficient and dependable in every way, and I sincerely think it would prove so along Government lines if temperance was strictly enforced.

WM. H. BALDWIN.

National Prohibition Would Enormously Increase Coal Production.

Jewell Ridge Coal Corporation, Tazewell, Va., December 6.

Editor Manufacturers Record:

How many men in the United States are devoting all of their time making liquors? How many devoting all of their time selling it? I judge about 20,000.* If they were all required to stop making and selling whiskey and to go to work in the coal mines they would produce on an average 10 tons of coal per man each working day. There are about 230 working days in a year. They would produce 200,000 tons of coal a day for 230 days, which would make 46,000,000 tons in a year. Dr. Garfield has stated that we are 50,000,000 tons short of what is needed.

The average loss, of all men working in Southern coal mines where whiskey is sold, is about 10 per cent. of their efficiency, in my judgment. Some men do not drink; some more than others; to prevent the manufacture and sale of it entirely would add at least 10 per cent. more to the present production.

JEWELL RIDGE COAL CORPORATION, By GEO. W. ST. CLAIR.

*The number of men is twenty-five times as great as Mr. St. Clair's estimate.—ED. MANUFACTURERS RECORD.

Prohibition in Alabama Proves That National Prohibition Would Greatly Increase Coal Output.

Black Diamond Coal Mining Co., Birmingham, Ala., December 6.

Editor Manufacturers Record:

In reference to national prohibition during the war. In the first place, let me say that this company stands for prohibition, always has, and always will, and we wish to take this opportunity of complimenting you on the vigorous fight which you have been making against this awful curse. It's a great victory for prohibition

when our industrial papers take up this great question and give it such prominence.

As you know, Alabama is "bone dry," and I am glad to say that we have real prohibition and not an imitation. So much so that we have closed, as you know, in this city one of our city jails.

As to the comparative efficiency of men now and before prohibition went into effect, we cannot emphasize too strongly the improved condition. In the first place, after every pay-day the output of our mines was decreased (formerly) from 25 to 50 per cent. for three to four days. At that time we were simply paying off once a month, and now we pay our men every two weeks, and it is very rare that our output is affected for more than one day after pay-day, and then not more than 10 per cent. It is undisputed, of course, that any man given to the liquor habit is not as efficient as a total abstainer.

It, of course, follows with prohibition that the moral and living conditions throughout a community are greatly improved, and, speaking for this district, as well as our own mining camps, the improved condition has been remarkable.

From our own experience, we are absolutely sure that if liquor is put out of the mining districts that it will unquestionably help the production of coal. We trust our Government will recognize this and abolish liquor altogether. If it is put into effect simply for the duration of the war, we know that the American people will never let whiskey again be legally sold.

We assure you of our hearty co-operation in this great fight.

BLACK DIAMOND COAL MINING CO.,

By H. E. BISSELL, Secretary and Treasurer.

Alcohol a Hindrance to Winning the War

Old Virginia Coal Co., St. Charles, Va., December 6.

Editor Manufacturers Record:

We either want to win the war or we don't want to win it.

I think we do.

The sale of alcoholic drink is either a help or a hindrance to the winning of the war.

I think it is a hindrance.

OLD VIRGINIA COAL CO.,

By C. H. THOMPSON, Vice-President.

Heavy Decrease in Coal Output Due to Drink.

Archbald Coal Co., Inc., Archbald, Pa., December 6.

Editor Manufacturers Record:

This company is for absolute prohibition for all time, especially for these days. We lose one-third of our output the first three days after every pay-day, due to drunkenness. We have several men employed who spend several weeks at a time on a drunk. Two men came on this week having been drinking, one for one week, the other for three; if we could make it, these men would never get drunk.

ARCHBALD COAL CO.,

By RICHARD HOWELLS, Superintendent.

Shipyard Men "Working Steady for a Bar-keeper"—Prohibition Would Enormously Increase Efficiency.

Mathis Yacht Building Co., Camden, N. J., December 7.

Editor Manufacturers Record:

For a number of years our plant was operating 50 per cent. efficiency, principally due to drinking among the men. By exerted energy and partial elimination of this class we have reduced over 25 per cent.

A conversation overheard gives a good idea as to the lost efficiency due to drinking. This occurred several weeks ago between a saloonkeeper and a friend. The friend inquired, "How's business?" "Oh, pretty good," replied the barkeeper. "I have a bunch of men working steady for me in that shipyard," meaning our plant.

In our opinion, the elimination of liquor for the duration of the war would increase the efficiency of the labor of the country an enormous degree.

MATHIS YACHT BUILDING CO.,

By W. W. ROBINSON, President.

Country-Wide Prohibition Would Increase Shipbuilding.

Bethlehem Shipbuilding Corporation, Ltd., Harlan Plant, Wilmington, Del., December 7.

Editor Manufacturers Record:

We are in receipt of your letter of the 3d inst., enclosing reprint from a recent editorial in the MANUFACTURERS RECORD bearing on the prohibition matter. We believe that absolute country-wide prohibition would increase the efficiency and regularity of labor.

S. K. SMITH,
Assistant General Manager, Harlan Plant.

Time Lost by Drinking Can Never Be Regained

Connell Anthracite Mining Co., Scranton, Pa., December 6.

Editor Manufacturers Record:

As to the liquor traffic affecting our business, we would say that we lose 16 per cent. of time due to this cause after each pay-day, and the time lost aside from pay-days we are unable to estimate.

There is no question as to the great loss to the country at large through the use, or misuse, we presume the brewers would say, of alcoholic drinking.

CONNELL ANTHRACITE MINING CO., H. J. SUTTON, General Auditor.

National Prohibition Would Add a Full Month's Work to Year's Coal Output.

Darkwater Coal Co., Minersville, Pa., December 7.

Editor Manufacturers Record:

There can be no question that the efficiency of many of our employes would be increased under a complete prohibition law. The Darkwater Colliery employs about 350 men and the Buck Run Colliery about 550 men. The employes are paid every two weeks, and the first day after each pay we can count on having between 75 and 125 men off at Buck Run Colliery and about one-half of this number at the Darkwater Colliery. The second day after pay we usually see some of the missing ones return, but it frequently happens that some of the men are off from one to three days after each pay.

This condition is repeated after all holidays, and we have no hesitancy in saying that our output would be considerably increased at both collieries if the number of men remaining idle after pay-days and holidays worked on those days. Our output at Buck Run amounts to 25,000 tons per month and at Darkwater 12,000 tons per month, and we feel quite sure that in any calendar year we could increase the output by at least one month's tonnage if all the men worked steadily.

JAMES H. COLLIER, Secretary.

National Prohibition Would Help Tremendously.

La Follette Coal & Iron Co.,

La Follette, Tenn., December 6.

Editor Manufacturers Record:

I am of the opinion that a nation-wide, bone-dry law would help the country tremendously in the present emergency. We find, however, that local prohibition and State prohibition are ineffective, as large quantities of liquor reach the workmen even in bone-dry territory from wet sections of the country.

L. C. CREWE, President and General Manager.

National Prohibition Fully Enforced Would Help Shipbuilding.

Alabama Dry Dock & Shipbuilding Co., Mobile, Ala., December 7.

Editor Manufacturers Record:

In our opinion the establishing of complete prohibition during the war, as a war measure, prohibiting manufacture, sale and distribution of alcoholic drinks of every kind, will be a distinct advantage to all manufacturers or shipbuilders. We know from our experience

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ence that even a partial prohibition inefficiently enforced under the State law has resulted in an increase of efficiency of labor.

DAVID R. DUNLAP, President.

Production Would Be Increased in All Lines 10 to 20 Per Cent. by National Prohibition.

Borderland Coal Co.,
Borderland, W. Va., December 6.

Editor Manufacturers Record:

We very much approve of discontinuing the sale of alcoholic drinks during the war.

I do not hesitate in saying that we believe if the entire United States was prohibited from selling whiskey and beer that production in all lines would be increased from 10 to 20 per cent. We therefore hope that you will use your influence to have a bill of that nature passed.

L. E. ARMENTROUT, Manager

Already Have Prohibition in West Virginia.

Buckhannon River Coal Co.,
Unontown, Pa., December 8.

Editor Manufacturers Record:

As our operation is in the State of West Virginia, where prohibition is already in effect, we do not see that complete prohibition would make any material change in conditions in so far as this company is concerned.

BUCKHANNON RIVER COAL CO.,
By J. G. BINNS, General Manager.

Nation-Wide Prohibition Would Increase Coal Output.

Buffalo-Thacker Coal Co.,
Chattaroy, W. Va., December 6.

Editor Manufacturers Record:

We are in a dry territory, and have taken every precaution that presented itself to keep only such men that are apparently abstainers from all forms of intoxicants.

And aside from the moral issue, and only taking into consideration the labor as it is now distributed, we would be safe in saying that with nation-wide prohibition we could increase our output of coal 100 tons per month. And after the labor had been properly distributed we could increase our output more than this.

BUFFALO-THACKER COAL CO.,
By J. W. LAWTON, Vice-President.

Seventy-five Per Cent. of Labor Shortage at This Mine Due to Liquor.

The Blair Coal Co.,
Tuscaloosa, Ala., December 8.

Editor Manufacturers Record:

Your letter of the 4th relative to the effect upon the mining operations by the sale and distribution of alcoholic drinks:

We see very helpful evidence of the prohibition laws in Alabama at our plants, and firmly believe in the absolute prohibition under rigid Government regulations and control.

Our greatest handicap in producing a maximum output is in alcohol, and the source from which the distribution is made is through the operation of "wild-cat" plants in the hills.

We believe that 75 per cent. of the labor shortage at our mines is directly caused by the whiskey traffic.

F. G. BLAIR, President.

Cut Out Brewery and Race Horse Traffic as a War Measure.

C. H. IRELAND, President Odell Hardware Co., Greensboro, N. C.

I have read with the greatest degree of pleasure and approval your communication of November 21 to Hon. R. S. Lovett, chairman of the War Industries Board of Washington, D. C. I wish to place my endorsement upon your position with regard to the cutting out of the manufacture of alcoholic drinks and transportation facil-

ties that go to these plants and transportation room which they occupy in shipping their product to weak-minded people who don't know the value of their own money. Also to approve of your position with regard to the transportation of race horse and race track gamblers from place to place.

We down here in this country have voluntarily accepted the interpretation of the railroad companies as a necessity which requires them to take off a great number of trains, and people are standing in the aisles for hundreds of miles because they haven't a seat and in order to accommodate the railroad. Only last week I rode 90 miles, standing all the way. There were numbers of ladies standing in the aisles at the same time, and we had paid our transportation and yet had no place to sit, and we did this gladly in order to help the railroads out of their pressure.

Only yesterday one of my good customers was in to see me. He runs a furniture manufacturing establishment, and he told me he would have to shut down his plant, turning out of employment 300 hands, because the Government decided that his manufacture was non-essential, and yet it is a man whose business has always been one of value in the town in which he lived, and who kept honest, upright citizens in his employ. He must stop his entire plant because the Government cannot transport his material, either coming in or going out. Now, if such is to be the case, it certainly seems that your request is reasonable, and I trust Judge Lovett will act on it. If not, then you want to make a national affair out of it and I will be glad to circulate the petition in this country, urging that the Government adhere to your appeal and grant your reasonable request. Keep the good work going!

An intelligent knowledge of Germany's war plans, and what is necessary to defeat them, will help win the war.

Read and distribute these two pamphlets.

Rev. Dr. Newell Dwight Hillis' Picture of Germany's War Plans and Her Atrocities in Belgium and France

[Reprinted from Manufacturers Record, Oct. 18, 1917.]

\$4.00 a Hundred 5 Cents a Copy

AMERICA'S RELATION to the WORLD WAR

SHALL OUR NATION LIVE OR PERISH?

(A 52-page Pamphlet.)

BY RICHARD H. EDMONDS

Editor Manufacturers Record.

\$10.00 per Hundred 10 Cents a Copy

Published by

MANUFACTURERS RECORD

A Weekly Exponent of America.

Baltimore, Md.

Subscription price \$5.00 a year

15 cents a copy.

THE RIGHT SPIRIT.

THIS is a time to be cheerful; glad that as iron men we can help Uncle Sam; glad that we have had prosperity which enables us to pay the heavy taxes made necessary by the war; glad that we live in these great times which when they are over will leave the world better and nobler.

Let us not complain over our troubles.

The foregoing from an advertisement of the Matthew Addy Company, iron merchants of Cincinnati, voices what should be the sentiments of all Americans, however great the sacrifices may be.

Let us rejoice that we are privileged to share in the great task, to endure, and if need be to suffer that the world may be the better because we have lived.

GOVERNMENT CONTROL OF THE RAILROADS WOULD BE UNFORTUNATE.

OUR Washington correspondent indicates that the prevailing sentiment in that city is that the President will ask that the railroads be placed under Government control.

We do not believe that Government control is the best way in which to meet this situation.

Through the Interstate Commerce Commission, through Congressional yielding to the bludgeon of railroad brotherhoods, through national and State legislation, the railroads have been brought to their present condition of inability to handle the traffic of the country. This is not the fault of the railroads. In the past they were guilty of many serious blunders and of some outstanding sins, but these things are largely a matter of the past, and for years the railroads have been struggling against tremendous odds to prevent the situation which now faces the country. They warned the country unceasingly of the certainty of this condition, just as the MANUFACTURERS RECORD has done for fifteen years.

President Wilson himself failed to see the situation, just as he failed to see the need of preparedness of an army and a navy adequate to the present conditions. Congress blindly refused to heed the facts which every intelligent, thoughtful man who studied the business conditions of the country would of necessity have been forced to see. The railroads have been short of locomotives and short of cars. They have not been able to maintain their facilities in keeping with the growth of the country. The supply of cars is wholly inadequate to their needs. But these things the railroads themselves have long foreseen, and in vain they sought for legislation or for freight rates which would enable them to overcome this condition. If given adequate freight rates and that financial co-operation which they should have in order to avoid their going into the market in competition with the Government for capital, the railroads would be in far better shape to meet the needs of the times under their own management than they could possibly be under Government control.

We have already gone too far in Government control. We are heading straight to State socialism, and while it is yet possible to avoid going to the extreme it should be done. There is even now a vast conglomeration and aggregation and lack of co-ordination in the work which the Government is doing. To throw the entire railroad management of the country into Government hands would only intensify the situation and add to the complications. Some things must be left to individual control. The Government has more on its hands than it can possibly do to advantage or to efficiency. It is making many grave mistakes, and these will be increased as we increase the power of the Government over all of the business activities of the nation, and especially over transportation.

Our Washington correspondent intimates that the President may call for Government control because of the radical element in Congress which might otherwise demand actual Government ownership. Is it possible that this can be true? Is the nation still to be dominated by a radical element in Congress which seeks not the welfare of the country, but the carrying out of its own preconceived notions? We are not prepared to believe that President Wilson would sacrifice principle for expediency, and if he calls for Government control of the railroads we are not prepared to believe that it is merely to overcome the radical element in Congress which would fight for Government ownership. That might be politics, but it certainly would not be statesmanship. The railroad men who know every detail of the whole situation can handle the railroad operations to much greater advantage to the country than could any Government control. Government control has been disastrous rather than helpful to the coal interests of the country, and we are paying the penalty of many mistakes made by the coal administration. Even worse conditions would, we believe, follow Government railroad control.

THE IMMENSITY OF ENGLAND'S ECONOMIC CONTROL OF BUSINESS FOR WAR PURPOSES.

An idea of the scope and intricacy of British control of ordinary business activities is given in a list of control boards published by "The Americas," issued by the National City Bank of New York. The list was recently made public by the British Government in a directory printed for the convenience of persons having business with these various committees. This lengthy list gives an indication of the extent to which this country may have to organize similar committees as the war progresses:

Acetylene Committee
Admiralty Coasting Trade Committee
Admiralty Board of Inventions and Research
Aerial Transport Committee
Aeronautics Advisory Committee
Agricultural Machinery and Implements Branch of the Ministry of Munitions
Agriculture and Fisheries Board and Royal Agricultural Society (Joint Committee)
Alcohol Supplies for War Purposes Advisory Committee
Army Contracts Advisory Committee
Army Supplies Commercial Department
Black List Committee
Bleaching Powder Committee
Blockade Ministry Committees
Breathing Apparatus in Coal Mines
Building Labor Committee
Building Trades, Central Advisory Committee
Business Names Registry
Butter Supplies Advisory Committee
Canal Control Committee
Capital Issues Committee
Cargoes (Diverted) Committee
Cargoes (Delay in Unloading) Committee
Cargoes—Insurance
Cattle, British, Committee on Utilization of
Chemical Trade Committee
Coal Exports Committee
Coal Mines (Controller of) Advisory Board
Coal Mine Department
Cocaine or Opium (Permits) Committee
Commercial and Industrial Policy Committee
Commission Internationale de Ravitaillement
Comptoband Committee
Contracts made Prior to the War
Controlled Establishments, Board of Referees on Profits
Copper Committee
Cotton Control Board
Cotton Exports Committee
Cotton Growing in the British Empire, Committee on
Defense of the Realm (Licensed Trade Claims) Commission
Defense of the Realm (losses) Commission
Delay in Unloading Cargoes Committee
Diamond Export Committee
Distributing Trades (Scotland) Committee
Diverted Cargoes Committee
Dyes, Commissioner for
Electrical Trades Committee
Electric Power Supply Committee
Employ Cotton Growing Committee
Enemy Debts Committee
Enemy Exports Committee
Enemy Supplies Restriction Department
Engineering and Shipbuilding Establishments Production Committee
Excess Profits Duty Committee
Exports Committee
Exports and Imports Licensing Committee
Fertilizers Committee
Fair Prices Committee
Finance Department (Blockade)
Fish (Coarse), Irish Committee
Fish (Cured) Committee
Fish Food and Motor Loan Committee
Fish Food Committee
Fish (Tinned) Imports Committee
Fresh Water Fish Committee
Furries Sea (Scottish) Committee
Flow-Mile Control Committee
Food Ministry
Food Production Advisory Committee
Food Production Department
Food Production in Ireland Advisory Committee
Food Production in Ireland Departmental Committee
Food Production in Scotland Committee
Forage Committee (Farm Produce)
Foreign Claims Office
Foreign Trade Debts Committee
Foreign Trade Department
Fruits (Import Licenses) Committee
Fuel Research Board
Glass and Optical Instruments Committee
Grain and Potato Crops (1917) Committee
Grain Supplies Committee
High Explosives Committee
Hop Control Committee
Horse Breeding Committee (No. 2)
Horses (Utilization and Feeding of) Committee
Housing (Building Construction) Committee

Imperial Mineral Resources Bureau (Committee on Proposed Establishment)
Imperial Preference, Ministerial Committee on
Import Restrictions Department
Indian Wheat Committee
Industrial (War Inquiries) Branch
Information Department of Foreign Office
Insurance of British Ships' Cargoes
Insurance Intelligence Department
Invention and Research, Admiralty Board of Iron and Steel Industries Committee
Labor Advisory Committee (National Service Department)
Labor Ministry
Land Substitutionary (Scotland) Committee
Leather Supplies Central Advisory Committee
Licensing Committee (Exports and Imports)
Liquor Trade (Financial Aspects of Control and Purchase)
Liquor Traffic, Central Control Board
Lubricating Oil Advisory Committee
Machine Tool Committee
Machinery and Implements, Agricultural
Machinery, Central Clearing House for Meat
Metal (Non-Ferrous) Trades Committee
Metals and Materials Economy Committee
Mercantile Marine (Seamen) Conditions of Employment, Inter-Departmental Committee
Mercantile Marine (Seamen's Effects) Grants for Losses through Hostile Operations at Sea Committee
Mercantile Marine Standard Uniform Committee
Mine Distribution Committee
Mine-Rescue Research Committee
Mineral Resources Advisory Committee
Mineral Resources Bureau Committee
Munitions Boards of Management Executive Committee
Munitions Financial Advisory Committee
Munitions Finance Committee
Munitions Hours of Labor Committee
Munitions (Inter-Allied) Bureau
Munitions Inventions Panel
Munitions Labor Priority Committee
Munitions Ordnance Committee
Munitions Parliamentary Executive Committee
Munition Priority Advisory Committee
Munitions Workers' Health Committee
Munitions Works Board
National Service Central Advisory Committee
National Service Department
National Service (Ireland) Department
Oats Control Committee
Oils and Fats Branch of the Ministry of Munitions
Oranges, Advisory Committee on Imports
Overseas and Government Loans Committee
Overseas Price Disposal Committee
Paper Supplies Royal Commission Passenger Traffic between United Kingdom and Holland, etc., Committee
Petrol Deposits in Ireland, Committee on
Petrol Control Department
Petroleum Executive
Petroleum Pool Regulation of Supplies Committee
Pig-Breeding Industry (Ireland) Departmental Committee
Preference, Imperial Port and Transit Executive Committee
Potash Production
Poultry Advisory Committee
Pre-War Contracts Committee
Prise Cargoes Release Committee
Prise (Overseas) Disposal Committee
Production, Committee on Purchases Department
Railway Executive Committee
Railway Executive Committee (Ireland)
Ratfounding Consultative Committee
Revitallement Commission Internationale de Raw Materials Finance Branch of the War Office
Reconstruction Ministry
Registry of Business Names
Registry of Business Names Committee (Ireland)
Reserved Occupations Committee
Road Stone Control Committee

Rubber and Tin Exports Committee
Scientific and Industrial Research Department
Scottish Shale Industries Committee
Seamen, Conditions of Employment
Shipbuilding Advisory Committee
Shipbuilding Construction Committee, Ministry of Shipping
Ship Licensing Committee, Ministry of Shipping
(Neutral) Detention Committee
Shipping and Shipbuilding Industries Committee
Shipping Control Committee
Shipping (International) Committee
Shipping Ministry
Spirits and Wine, Delivery of from Bond, Advisory Committee
Board of Customs and Excise
Standard Uniform for Mercantile Marine Committee
Sugar Supplies Royal Commission
Sulphate of Ammonia Distribution Committee
Sulphur, Sicilian, Committee on Supplies of Sulphuric Acid and Fertilizer
Trades Committee
Tea Advisory Committee
Tea Control Committee
Tobacco Supplies Department
Tin and Rubber Exports Committee
Tobacco and Matches Control Board

Tobacco (Import Licenses) Committee
Tonnage Priority Committee
Trade after the War, Committee on Commercial and Industrial Policy
Trade, Development of between British Empire and Belgium
Trading with the Enemy Advisory Committee
Treaties with Enemy Countries Revision Committee
Trench Warfare Chemical Advisory Committee
Trench Warfare Commercial Advisory Committee
Trench Warfare Mines Committee
Trench Warfare Research Advisory Panel
Trench Warfare Supply Department, Chemical Section
Utilization and Feeding of Horses Committee
War Output, National Advisory Committee
War Risks Insurance Office
War Trade Department
War Trade Advisory Committee
War Trade Intelligence Department
War Trade Statistical Department
Wheat Executive
Wheat Supplies—Royal Commission
Wools and Stones (Import Licences) Committee
Wool Purchase Central Advisory Committee
Woolen and Worsted Industries Board of Control

THE VOICE OF A MOTHER AS SHE OFFERS HER SON TO THE NATION.

Editor Manufacturers Record:

A copy of your MANUFACTURERS RECORD has fallen into my hands, and may I say I honor you and thank you for the work you are doing. I have read your articles on this war, the Soo' Canal, Dr. Muck, etc., with a throbbing heart. I am only a woman—a mother, in the beautiful South—but I am *all* American. I have given my son, my first born, to his country. I am proud to have a son to give. I am ready and willing to do my bit anywhere and everywhere I can. If more of the papers and periodicals in this country would adopt your tone, there would be fewer pro-Germans at large, exuding war poison day and night. Hurrah! for the stand you have taken! God bless you and your MANUFACTURERS RECORD! May you live long to wield your powerful pen, and send out through your RECORD messages of warning and help!

You are right. We have been told, so long, this war was not *ours*, it's hard for the masses and people in our rural districts to realize and understand that we are in a fight to the death for humanity and democracy. Is there no way to reach and wake up these sturdy sons of the soil?

With all good wishes,

Very sincerely,
MRS. WALTER S. BLACKMER,
210 South Jackson St.,
Salisbury, N. C.

The foregoing letter expresses the boundless patriotism of the mother who wrote it, who rejoices that she has a son to give to the holy cause in which he has enlisted.

It also explains why there is such great need at the present time for trying to arouse our country to the meaning of this war. For nearly three years the nation was drugged to sleep by the constant reiteration of the statement that this war did not concern us, and that we should be neutral even in thought. So deep was the impression made upon the people of this country by the reiteration of these statements that it is now well-nigh impossible to get out of the minds of many the first impression so deeply engraved upon them. It will need all the power of President Wilson's strength, all the energy of his nature and all his ability to reiterate and reiterate the fact that **this is our war**, and that our own life as a nation is at stake, before we can overcome the effect of the deadening power which for nearly three years was preached to the American people.

The moral stamina of the people of this country was drugged into insensibility. The awful realities of the war were so stupendous and overpowering that many of the leaders in this nation shuddered at the bare possibility of our becoming involved, and so they tried to convince themselves and convince the country that this was not our war. Infinite harm was thus done. Many thousands of lives and billions of money will have to be expended merely to overcome the deadening power of the drug of peace which was thus poured into the veins of American life.

We cannot wonder that the people of the country have not yet awakened when for three years they listened to the preaching from the pulpit, from the public platform, in political campaigns and else-

where of the accursed doctrine of peace and prosperity, regardless of how we attained peace and prosperity. We must now inevitably pay the penalty. The pacifists and those who followed their lead will in the great Day of Judgment have to answer for misleading the public and for the deaths which will follow their false teachings.

This was our war, if we were true to our responsibility to God and man, from the very beginning, and certainly it was our war from the day when the Lusitania was sunk and helpless mothers and wailing babies were sent by the diabolical power of Germany to feed the sharks. That was a distinct challenge to the moral sense of America, and the message sent by President Wilson rang true and clear, but the nation halted and we continued to answer to attacks upon the life of our country by other notes, and the nation continued to falter, and pro-Germans, posing as religious workers and as preachers of the Gospel, and in the Congress of the United States, and in many newspapers, did their utmost to continue the deadening power of shirking responsibility and convincing the nation that this was not our war.

This nation very nearly lost its soul. It was heading straight to a moral degradation from which there could have been no redemption without having in some way to pay an awful sacrifice for contentedly saying to itself: "Soul, thou hast much goods laid up for many years; take thine ease, eat, drink and be merry." And had we pursued this policy much longer we believe that Almighty God in His Justice would have said: "Thou fool, this night thy soul shall be required of thee."

We were coining money by the billions out of the very life-blood of those who in Europe were trying to save civilization, and in doing this to save us. We reached eager hands across the seas to England, France and Italy to gather in their wealth by the sale at exorbitant prices of the things which they needed in this great contest. But by every means in our power we cowardly refused to recognize our responsibility or to hear the call of God in this great fight of atheism and barbarism against Christianity and civilization.

Mrs. Blackmer says: "I am only a woman—a mother—but I am *all* American. I have given my son, my first-born, to his country. I am proud to have a son to give." May God bless this mother as she thus consecrates to the service of the Almighty that which is infinitely dearer to her than life itself! And may all the millions of mothers in America who shall have to give their sons to this cause feel that in doing so they are committing them to the holiest work to which men have ever dedicated their lives. It is to such mothers as this that not only this nation, but all civilization must look for help. They are the ones who will have to quicken the life of the nation into a flaming fire. They are the ones who must reach the people and by their heroic sacrifice quicken the heroism of others. And while we may well say, God bless the mothers! we may, too, say, God bless the sons who have such mothers! and God bless the sons who meet the responsibility of the hour and measure to the supremest task to which the world has ever been called!

ADVOCATES PROHIBITIVE DOG TAX.

CHARLES CATLETT, chemist and geologist, Staunton, Va., in writing to the MANUFACTURERS RECORD, commanding its fight for the protection of the sheep industry from sheep-killing dogs, calls attention to a suggestion made to him which, if carried out, would make it easy, he thinks, to eliminate the cur dog pest in a few years. The suggestion is that all dogs at present be listed and taxed at the present rate, whatever that may be in those States with existing dog licensing laws, with strict enforcement of the law, and then put a prohibitive tax on all additional dogs. Mr. Catlett writes:

A man will usually fight like blazes for a dog to which he is attached, but he does not care anything for a dog which he does not own, and if he knows he has to pay a very large tax on any new dog he gets, he will be slow in getting one.

MR. J.

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December 13, 1917.]

MANUFACTURERS RECORD.

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MR. JACOB SCHIFF OF KUHN, LOEB & CO.
TAKES A DEFENSELESS POSITION.

POSSIBLY our readers may be interested in some recent correspondence between Mr. Jacob H. Schiff and the MANUFACTURERS RECORD, based on Mr. Schiff's discontinuance of his long-time subscription to the MANUFACTURERS RECORD, because it had published a letter from a New York man criticizing the activities of anarchistic Russian Jews in this country and in Russia. It seems to be a rather amazing position for a great financial leader to take that he will not read any paper which dares to criticize any of his coreligionists merely because of that fact. We freely grant Mr. Schiff or anyone else the right to discontinue his subscriptions, but when he does so on the basis that he would limit its right of free speech, we must draw the line and continue as in the past to publish whatever we believe to be for the public good, regardless of the spirit shown by Mr. Schiff or any other subscriber or advertiser.

New York, November 19.

To the Publisher Manufacturers Record,

Baltimore, Md.:

Dear Sir—Relying to your communication of the 17th instant, Mr. Schiff regrets that he cannot see his way to continue his subscription to your paper because of offensive strictures which have been made in your paper upon his co-religionists as a class, to which his attention has recently been called.

Respectfully,

C. HOWENBERG,
Private Secretary.

Baltimore, November 23.

Mr. Jacob H. Schiff,

52 William Street, New York, N. Y.:

Dear Sir—We have a letter from your private secretary under date of November 19, advising us that, on account of offensive strictures which have been made in the MANUFACTURERS RECORD upon your co-religionists as a class, you cannot see your way clear to continue your subscription to the MANUFACTURERS RECORD.

Won't you be good enough to refer us to the particular items that you have in mind? The courtesy will be appreciated.

Very truly yours,

FRANK GOULD,
Vice-President.

New York, November 27.

Frank Gould, Esq.,
Vice-President Manufacturers Record,

Baltimore, Md.:

Dear Sir—Relying to your letter of the 23d instant, Mr. Schiff wishes me to send you the accompanying letter with enclosure from the assistant secretary of the American Jewish Committee, which explains itself.

Respectfully,

O. HACKER,
Private Secretary.

New York, November 26.

Dear Mr. Schiff—In accordance with your request over the telephone this morning, I take pleasure in sending you herewith a copy of the editorial in the MANUFACTURERS RECORD of August 23, which was a subject of comment at the recent meeting of our executive committee.

It is quite possible that the managers of the paper may give as an excuse for the publication that it was simply printed as the opinion of one of their readers. But no self-respecting paper would print matter couched in such scurrilous terms and written by a person whose ignorance is indicated by the statement that William Sulzer is a Russian Jew. The short introduction indicates beyond a doubt that the editors endorsed the sentiments of their correspondent.

Very sincerely yours,

HARRY SCHNEIDERMAN.

Jacob H. Schiff, Esq.,
New York City.

Baltimore, November 30.

Mr. Jacob H. Schiff,

New York, N. Y.:

Dear Sir—Your letters of November 19 and November 27 have been brought to my attention. I confess that I had been led by a study of your work in the past to believe that you were a man of somewhat broader views than indicated in the discontinuance of a subscription to the MANUFACTURERS RECORD because, forsooth, we published an extract from a letter from a New York man in regard to the Russian Jews as an expression of his views on the subject and the socialistic tendency developed by many of these Russian Jews.

May I ask if you are in favor of the things which have recently been done in Russia by socialistic Jewish agitators? I am a Baptist, but I would consider myself disgraced if I were so narrow in my views that I was not willing to permit any publication to criticize the views of the Baptists.

The MANUFACTURERS RECORD is supposed to be—at least intelligent people seem to take that view of it—an exponent of Americanism. I shall expect to express my

opinion of all public questions with exactly the same freedom that I criticized the Pope's first effort after peace—not as a religious issue, but as a broad proposition of world interest.

May I ask the question if your views as to the Jewish people are so narrow that you are unwilling to permit the shortcomings of any Hebrews to be criticized? Or do you broadly take the ground that everything which a Hebrew does is right simply because done by a Hebrew? If you take this position, then surely you are holding untenable ground not worthy of any leader of the Hebrew race.

Now it so happens that we have in this week's issue an article which gives unstinted praise to the Jews for many things which Germans have claimed as their own, and we have in hand for a later issue another very remarkable article by the same writer, Professor Leigh of Kentucky, on some of the achievements of the Jews other than those mentioned by him in this week's issue.

If you are to follow every paper which at any time publishes anything on the Jews, and discontinue subscription to those which perchance you think carry something in their columns which you consider unfavorable to Jews, I take it for granted that it is your plan to keep track of all the good things that are published about Jews and subscribe for every paper which at any time lauds their work.

The MANUFACTURERS RECORD does not seek a subscription on any such basis, and we trust that no other reputable paper in America does. But I confess to amazement that a man of your standing in the business world gives as a reason for discontinuing his subscription to any publication the fact that something was found in its columns which was regarded as a criticism of the Jews. If you carry this plan out I suppose that you refuse to do business with any concern which criticizes Jews, and confine your business operations entirely to the men or the organizations which through fear of lack of business, or for some other reasons, are never willing to express a straight and honest opinion for or against individual Jews or the Jewish race.

It so happens that the MANUFACTURERS RECORD has had a very high opinion of the splendid work of many Jews, and the writer has had the privilege of calling as friend a number of Jews; but it would be absolutely false to its convictions of newspaper work if it refused to mention any of the shortcomings of public men merely because they were Jews; or if it declined to publish the fact that the socialistic agitation on the part of many Jews in this country and of many Jews in Russia are a serious menace to both countries; and I am sure that as an intelligent Jew you cannot possibly question the accuracy of this statement. If you are prepared to stand sponsor for all that every Jew does merely because he is a Jew, then will you permit me to suggest that I think you would be a very unfortunate leader of the Jews of this country; for I am sure that the more intelligent thinking Jews of America would not take the same ground.

Though you have been denied the privilege of reading the MANUFACTURERS RECORD by asking us to discontinue its subscription, you will, nevertheless, I am sure, be greatly interested in the enthusiastic praise given in this issue to what the Jews have wrought in Germany, and the still more intensely interesting article on the subject to appear in an early issue. And both of these articles were written at my special request.

Very truly yours,

RICHARD H. EDMONDS,
Editor.

In reply to this the following letter was received:

New York, December 4.

Richard H. Edmonds, Esq.,
Editor and General Manager,
Manufacturers Record,
Baltimore, Md.

Dear Sir—Mr. Schiff wishes me to say to you, in reply to your letter to him of the 30th ult., that he may claim the right to decline, for any reason that may appear to him satisfactory, subscription to any publication, but on the other hand he fully concedes to you the privilege to write him intemperate and offensive letters in return.

Respectfully,
M. BECKER,
Private Secretary.

The letter published in the MANUFACTURERS RECORD, which caused Mr. Schiff to discontinue his subscription, related to the socialistic activities of Russian Jews in New York. Bearing on the same subject the New York Tribune of December 9 calls attention to the work of socialistic Jews who left New York for Russia and have been active in bringing about the fearful conditions now prevailing in that country. On this point The Tribune says:

Dozens of East Side agitators are now in Russia cooperating with the Bolsheviks to bring about a separate peace with Germany, according to a statement issued yesterday by the Russian-American Alliance, which had opened offices at 277 Broadway to promote public interest in Russian affairs. Chester M. Wright, who resigned from the Socialist party because of its anti-war attitude, and is now working with the alliance, asserts that some of these agitators left New York re-

cently, and that at least one of them carried a message to a Bolshevik leader from the Workmen's Council, 175 East Broadway, a pacifist organization, headed by Jacob Panken, who was elected a Municipal Court judge by the Socialists last month.

The statement of the alliance says:

"S. Epstein, long well known as organizer of the Ladies' Waist Makers Union and editor of the union's official journal, is now in Russia as a Bolshevik agitator. J. Vostrow, organizer of a Jewish carpenters' union in New York, now is a Bolshevik organizer in Moscow. S. Shubin, a former New York Jewish newspaper writer, left America on November 7, posing as a clerk for an engineering mission, carrying letters and documents from the Workmen's Council and from a newly elected New York Socialist official. Dr. Max Goldfarb, formerly a labor writer, also is among those who slipped quietly away on a mission of disruption to the land from which they fled.

"America understands the nature of the Bolshevik movement in Russia in large measure through its understanding of those who have gone from America to take part in it and to help guide its erratic destinies.

"These men who have gone from America have been those most closely identified with that type of socialism in America known as Germanized Socialism, in which reality is denied and a metaphysical conception put up in its place. They also have been known in America for years as 'impossibilists,' which has meant taking no heed of the facts of today, but holding out for a grand debacle—dreaming about the future state of society instead of working for it."

Again we ask Mr. Schiff if he so strongly approves of everything done by a Jew, merely because he is a Jew, as to be unwilling to subscribe to a paper because it published an article criticizing these Russian socialistic Jews for their activities, which have now been largely responsible for the horrible debacle in Russia?

The MANUFACTURERS RECORD can afford not to have Mr. Schiff as a subscriber, but we do not believe he can afford to stand before the American people as refusing to subscribe to any paper merely because it criticized some of his co-religionists, and that is the reason which he gave for his action.

WE'RE COMING!

By Judge Stephen C. Bragaw, in University News Letter,
Chapel Hill, N. C.

We are coming, Mother England, we are coming millions strong;
Hands across the sea are reaching, gripped to rid the world of wrong.
We are coming, stricken Belgium, there with you to face the foe,
Pledged to make the haughty Prussian pay in full for all your woe.

We are coming, France, our sister, the glorious and fair,
By your side we'll soon be fighting in the trenches, in the air;
And the Hun shall feel the power of the men from o'er the sea,
We are coming and are swearing that this whole world shall be free.

We are coming, fair Italia, land from which Columbus came,
We, Columbia's sons, are coming, coming in Columbia's name,
Now to raise our starry banner where a Caesar wore a crown,
Knowing that when once we raise it, naught on earth shall tear it down.

We are coming, German Kaiser; call your hosts from hill and plain,
Mass your men and mass your cannon, but your work will be in vain.
We are coming, German Kaiser, and our coming sounds the knell
Of your boasted German Kultur that has made on earth a hell.

We are coming, men of Europe, we are coming millions strong,
There to stay and ne'er to falter, tho' the fight be hard and long.
"To the end" shall be our slogan, for the world it SHALL be free,
And the evil power of despots crushed at last on land and sea.

Hohenzollerns, Hapsburgs, hearken to the fast approaching beat
Of the footsteps of a nation that has never known defeat,
Clad in armor of the righteous, caring naught for German might.
We are coming, we are coming, there to win or die for right.

GOOD HIGHWAYS ESSENTIAL TO WINNING THE WAR.

THAT good highways are essential in the winning of the war was one of the outstanding features of the discussion of the American Association of State Highway Officials meeting at Richmond last week. The men interested in highway work gathered at that convention were not moved by any selfish spirit, but by broad patriotism; for we believe that the business men of this country today are willing to sacrifice their own interests at any time for the welfare of the nation. The men who were at that meeting have studied the question of highways closely. They have realized for years that the backwardness of this country in the building of improved highways was one of its most tremendous handicaps. They saw population driven from the country to the city by reason of the impassable mud roads existing in a large part of the country during the winter. They have seen the heavy cost laid upon the farmers in hauling their produce into shipping centers and the heavy cost of getting stuff back from the cities to the farms. They have seen the enormous increase of city population, running far ahead of the small increase in country population, and the inevitable development of the food situation which we now face, with production of foodstuffs steadily decreasing in proportion to population. These men have seen that good highways, wherever introduced, have revolutionized social and farm conditions, and because they have realized this situation by their intimate acquaintanceship with them, they are urging upon the country that as a war measure existing highways should be properly maintained and that new highways should be built, wherever it may be feasible, as a war measure.

This is directly in line with the teachings of the MANUFACTURERS RECORD for the last 25 years, long before the automobile and the motor truck tremendously intensified the need of good highways. It is in line with what we have been urging upon the country with all our power since the beginning of the European war in order to help to save the congestion of freight and the collapse of transportation by rail. Even should the Government furnish practically unlimited money to the railroads for expansion of terminals, of cars and locomotives, it would still not be possible for many years to come to make an extension of railroad facilities adequate to meet the growing needs of the country. A vast amount of traffic now carried by railroads, both of passenger and freight, could be switched to good highways if they existed throughout the country, and more and more this must be done, or we shall have such a congestion of traffic on the railroads as to make the winning of the war almost an impossibility for years to come. The development of highways and of water transportation is absolutely essential, and they should be pressed with the utmost vigor wherever highways can be constructed, on through lines as a part of a great national system of highways, and wherever water transportation can be developed for the handling of traffic now carried by the railroads.

It is true this would involve large expenditures of money and the employment of labor, but these things are just as essential as the building of ships, the production of food and the making of iron and steel. If our transportation completely breaks down, as it is in danger of doing by rail, there will be no safety for the nation, and this situation should now be met by the building of highways and the improvement of waterways. Every locomotive, every car, every mile of track in the country is already being overstrained, and the depreciation is far more rapid than the restoration that is going on. These highways should have been built years ago, and our waterways should have been improved years ago; but the stupid cry against the so-called "pork barrel," put forth by people who knew absolutely nothing about water transportation or the needs for it, and the failure of the country to realize the need of improved highways, kept the nation back and resulted in the present condition of congested freight traffic.

It is well that the Richmond convention pressed upon the attention of the country a thoughtful consideration of these facts. The resolutions adopted by that meeting, and published elsewhere, clearly state the issue before the country as to the need of highways.

PLANTS AND PROPERTY OF VITAL NECESSITY TO WINNING WAR SHOULD BE FULLY PROTECTED.

IF President Wilson's order establishing barred zones for alien enemies is to be made fully effective, it will be advisable to employ a much larger force of armed guards, preferably United States soldiers, than has so far been assigned to this work.

New York has been complaining that piers and warehouses and ships, so vital to the nation in the prosecution of the war, are at the mercy of German spies, but it is not alone in New York that the condition exists.

A trip along the waterfront of Baltimore will disclose the fact that at several important points no efficient means have been adopted to guard property and new work which is under way, which would take weary months to replace, without regard to the loss in dollars that might be involved in its destruction.

At one of the largest shipyards at this port, while there is a scattering of the company's police here and there, apparently no hindrance is put upon the free entry of anyone to all parts of the new plant under construction, and ships nearing completion can be very easily approached.

Is this true of conditions at other ports?

There was a time, when war was declared, when bridges and water-works, elevators and terminals were guarded by the militia. In many cases these have been withdrawn, and this is so throughout the country. While these soldiers are being trained for the battlefield, it is evident, either because of this withdrawal of guards or a discovery of the fact that this nation is dealing very leniently with its alien enemies, explosions, wrecks and other outrages are on the increase.

How long will we be asleep to the perils of the present hour? How much of a lesson will it take to make this country realize that the ruthlessness which did not spare Belgium will do all the harm it can do us in every way possible. The diabolical enemy works in dark and secret places, and the whole trouble is the immediate urgency of every question pertaining to this war is not realized by the people of these United States. Our people do not realize it; our legislators do not realize it; our governors, in some instances, do not realize it, and it almost seems at times as if the authorities in Washington themselves do not realize it.

It is just as important to guard property in this country, which is vital in the war, from the depredations of the enemy as it is to put soldiers in France, and, besides, there can be no possible objection to supplying ample guards for all of these dry docks and piers while we are awaiting the completion of ships without which our men cannot get to France. Would that they could, and would that we had 5,000,000 of them there now!

Why cannot the Governor of every State organize a home guard among the people who are too old to go into the army? In one State recently a proposition was definitely put up to the Governor to the effect that there were thousands of men over 45 years of age who were quite competent and willing to do guard duty in the downtown business sections or as railroad or dock guards at certain hours during the day or night when their services might be required. He was urged to authorize the formation of such a guard, and arm and equip it at the State's expense, which would be a perfectly proper expenditure for the State to make, but his reply was that this could only be done under the militia law, and this did not provide for troops of that kind. If this is a fair sample of the laws of other States, then some new laws are needed, for we are up against a proposition which is past the argument point.

Men of 45 and over should be drafted, if necessary, for this purpose. Many could be utilized in this way at the present time to do a service for their country, a service which we believe they will be glad to render and a service which is badly needed.

It should not be necessary for a shipbuilding company or a railroad company, working night and day, doing war work, to meet the country's needs, to have to provide guards for their property, and conditions in the labor market make it almost impossible to hire competent help for this purpose. The regular police forces of our cities are inadequate to do

this work. It is a job for the State and for the United States Government, and the sooner they start about it the better it will be for the country.

How long does anyone suppose an unattended stranger would be permitted to wander unmolested around a private shipyard or a Government reservation in Germany at the present time? Will it need the German airship, with its death-dealing bombs, which Admiral Peary predicts as likely to visit the United States at any time, to stir us from our lethargy?

NERVE OURSELVES FOR A LONG WAR.

FORMER PRESIDENT TAFT in a recent address said the war may last three to five years, and that we may have to raise an army of 5,000,000 to 7,000,000 men. Congressman Charles P. Caldwell of New York, a member of the House Committee on Military Affairs, is quoted in the New York Times as saying "it will be a long war and a war to the bitter end. It may take from 5,000,000 to 7,000,000 men from America. It will probably last from five to ten years longer. The price is going to be high, but liberty is cheap at any price."

These statements are very much in line with what the MANUFACTURERS RECORD has long said, and it is because of these possibilities that we have for three years urged the largest possible preparedness, regardless of the cost in money.

Germany has gone to the point where its people know they have the world's loathing and hate; they know that nothing but victory, it matters not what the price they may now pay, can possibly give them any vantage ground for generations to come. The Hohenzollerns and the Hapsburgs and all their crew know that defeat would mean their own death and the death of their dynasties, and so they too feel that they better fight on to the last available soldier rather than give up.

Everything therefore in Germany is keyed up to carry the struggle to the last desperate notch, and nothing but overwhelming defeat will make them yield. We must therefore face the situation of liberty or slavery, of civilization or barbarism, and carry the fight to victory full and complete. If by tremendous preparedness and throwing into the struggle every ounce of strength we can shorten the struggle, so much the better. But let us nerve ourselves and prepare for a long and desperate contest.

WIDE RANGE OF PRICES OF FARM PRODUCTS.

THE North Carolina Agricultural Extension Service publishes a weekly bulletin showing the prices paid by merchants for farm products in the leading markets of North Carolina, a most excellent way of letting the farmers in the different sections know what is being done in other parts of the State.

The report for the week ending December 3 shows a very wide variation, especially in corn. No. 2 white was quoted at \$1.10 at Salisbury, the lowest place in the list, and at \$2.10 at Charlotte, the highest; and yet these two points are only about 34 miles apart on the same line of road. Two points, Asheville and Newton, quoted No. 2 white corn at \$1.25, while the next lowest place was Winston-Salem at \$1.50. This range of quotations is entirely too great, and indicates that corn was either selling entirely too high at some cities or entirely too low at others.

The price for sweet potatoes for the week ranged from 75 cents at Newton and Lumberton up to \$1 and \$1.10 elsewhere, with \$1.25 at Monroe, the highest point reported. The range of prices for dressed hogs was from \$18.20 at Asheville and Charlotte, the two lowest points, up to \$25 at Tarboro, the highest point.

If the farmers of North Carolina will intelligently study these reports, and through the daily papers or the Agricultural Department develop a system by which the range of prices can be reported daily, they will be in a better position to intelligently watch the marketing of their products, while buyers would have better facilities for securing uniformity in prices. Buyers and sellers alike are placed at a disadvantage by such a wide range of prices for staple articles of the same quality.

How to Co-ordinate the Nation's Activities for War Work

[The following statement, prepared at the request of the Baltimore News, is as appropriate for every other city in the country as for Baltimore.—Editor Manufacturers Record.]

[Baltimore News, December 8.]

Commenting on the editorial in yesterday's News, "How Can Baltimore Put Its Industries on a War Basis," Richard H. Edmonds, editor of the MANUFACTURERS RECORD, said:

"It is well that this suggestion has been brought directly to the attention not merely of the industrial interests of Baltimore, but to every phase of the business activities of this city. The business of this nation now and until the job is done is to win the war. Nothing else counts. It seems almost superfluous to say, and yet some people do not seem to realize it, that we are in an actual life-and-death struggle as to whether this nation shall live or whether Germany shall dominate this country and the rest of the world.

"President Wilson has well said that it is a fight to the finish. There can be no compromise, no halting in a contest which means life or death to all civilization as against Germany's barbarism.

"This is a war long foreordained by Germany, of Atheism against Christianity, of barbarism against civilization, of autocracy against democracy. We are not in this war merely to make the world safe for democracy. That statement minimizes the magnitude of the task. We are in this war to save ourselves from destruction, and we did not enter the war until it was fully realized that our failure to do so would mean our destruction. We are not in this war for any theory of unselfish devotion to democracy. We are in this war for the purely selfish end of saving ourselves, having realized that if we did not fight by the side of the Allies in Europe we would have to fight Germany on our own shores, and without allies; and every intelligent man who had studied the situation knew that if England had been defeated our complete destruction and domination by Germany would have been inevitable.

"In the light of these facts, the one great supreme issue which this nation faces is to concentrate and consecrate every ounce of its moral, physical, mental and financial power to the winning of the war. Nothing else counts; that is the one supreme issue before the world today, and in comparison with that the Revolutionary War and the Civil War were of small importance. Under these conditions it will become necessary to put aside every non-essential thing and concentrate the activities of the country to the utmost extent of our power upon essential things, or the things which make for the winning of the war. Of necessity this will bring about many radical changes. Some things which are unimportant from the viewpoint of winning the war, however important they may have seemed to individual men and women, will have to be put aside and the plants and the man and woman power now engaged in producing non-essential things will have to be turned into producing essential things.

"There will be work for every man and woman. The demand for labor will far exceed the supply. Millions of women who have never felt it necessary to earn their living will have to engage in productive employment, regardless of whether they are rich or not. They will have to do this not for the sake of making money, but for the sake of helping to concentrate to the saving of the nation their power to produce. The call for women who have not heretofore worked, into business activities will be as incessant as the call for men for the shipyards, for the coal mines, for the iron and steel plants and for the farms. We shall be compelled to enormously increase our output of foodstuffs, even with a large decrease in the number of farm workers. We shall have to increase our iron and steel and coal output by the utmost possible stretch of the energy of the nation.

"We may create a great army, we may enlarge our output of foodstuffs and increase the production of iron and steel and coal; but all of this will be in vain unless we build ships, and more ships, and still more ships, at a more rapid rate than the world has ever known. Every ship that can be built on the Pacific and the Atlantic and the Gulf coasts must be built, for there will come a

crisis when the number of ships available will settle the destiny of this country and of civilization for good or for evil. Every ton of coal that is used for an unnecessary purpose, which does not in any way contribute to the winning of the war, is a criminal waste. Every man or woman employed in producing something which does not help the nation to win the war is directly contributing toward the lengthening of the war and the increase in the deaths of American soldiers.

"We shall all have to learn these things sooner or later. It would be of tremendous value to this country and to the nation if Baltimore would take the lead in showing to the country, as Davenport, Iowa, to which the News editorial referred, is undertaking to do, how the entire potential power of a great country can be concentrated upon doing the things which make for success in the war.

"There are many factories in this city which sooner or later may have to close because they are producing non-essential things. The nation cannot afford to permit them to use the coal and the raw materials and the labor now employed. But these very factories might wisely be turned into producing things which will help to win the war. Individual concerns will hardly know how to adjust their operations to meet this condition, and it will be a difficult proposition for the National Government to do so. An organization of business men in Baltimore, formed for the express purpose of putting this entire city on a war-producing basis, could bring about all the changes that may be necessary without loss to individual enterprises and without loss to individual laborers, for arrangements could be made to shift the plants producing non-essential things into the production of essential things, and the employment of labor would thus be continued to the advantage of the individual laborer, the community and the country.

"As a nation we have been too prone to think that this war will be over in a short time, and that it only needed the entrance of the United States into the contest to insure an early peace. The best-informed men in this country, and the army and navy experts from other countries who have been visiting this country, so far as I have been able to come in touch with them, look for a war of at least two to five years. I think we will be very fortunate indeed if through our co-operation with the Allies peace can be secured within two years. We shall probably have to send at least 4,000,000 or 5,000,000 men to Europe and back them up with the utmost power of the nation in guns, in explosives, in railroad facilities on the battlefields, and in every other convenience that can help our men in this great struggle to which they have been called.

"Every man or woman who today fails to realize the seriousness of the situation is in effect an enemy to this country. Any failure on the part of any individual to strive for increased food production and larger food conservation is contributing directly to the aid of Germany.

"The people of this country, so far as they have been able to voice their sentiments through public gatherings, are perfectly willing to devote their entire business activities to the nation's welfare, and, wherever it may be necessary, to abandon business operations if in so doing they can help in furthering our cause against Germany's fearful war upon us. But how to co-ordinate all these activities has not yet been worked out.

"Baltimore could properly set an example to the entire country by an intelligent survey, not only of its industrial interests, but of its housing problem, of its food-stuff problem, of turning people from non-essential employment into the things which are essential, and in doing this it would not only stir the whole nation, but it would assure abounding business activity to the whole city.

"The mental stimulation of the war will quicken into life latent patriotism. It will stir people to doing things which they never did before. It will create an incessant

unprecedented demand for everything which makes for the sustenance of our own people and the Allies, for the production of iron and steel, and coal, and chemicals, and all the wide range of products which go into the mighty contest. The loss of man power withdrawn by the army and navy from the farm and the factory must be more than made up by the greater development of the latent potentialities in the man and woman power of the country not now fully utilized, and we must cut out drastically everything which caters only to the production of non-essentials and concentrate the whole potential power of the nation upon producing the essential things.

"Viewed from a business standpoint, this means a broader, wider and infinitely greater activity in all the great substantial interests of the country than ever before, but it means also that the nation would be recreant to its responsibilities, to its soldiers and to its own life and to civilization if it did not cut out every ton of coal, every ton of raw materials, every ton of transportation now used for anything which does not directly and specifically increase our ability to win the war."

Mr. De Kalb on Sulphur as a Fertilizer—He Objects to Use of His Name for Promotion Purposes.

15 Salvatierra Street,
Stanford University, Cal., December 3.

Editor Manufacturers Record:

Through your journal and through other periodicals I have been urging that our Government appoint a committee to further the use of sulphur as a fertilizer to assist the fertilizer manufacturers in doing what must be done in this country to increase the crops to meet the imperative needs of war. This is a matter of greatest importance, and is receiving the support of many patriotic citizens. I am glad to see the prominence that is being given to the subject by the press of the country, and am also gratified at the private initiative that this propaganda has stimulated. Naturally, the owners of sulphur properties have welcomed the information that this element can, under proper control, and on suitable soils, be made of value to the farmer, because it offers an opportunity to enter a market which, in the case of certain deposits, might be impracticable if it were necessary to refine the product. This applies with peculiar force to the large area of sulphur beds in West Texas. I have pointed out that a considerable part of that area, judging from the samples taken by Government and State officers, is adapted for use as a fertilizer just as it is, and that it would require no further treatment than to grind it to the necessary fineness, which is about that of cement.

Several of the West Texas concerns that have undertaken to exploit those fields have communicated with me, and I have given them such counsel as I could, but have always insisted that the only way in which the enterprise could be carried out successfully would be to co-operate with Government committees or with State Councils of Defence. I have had no business relations with any of these companies. The American Smelting & Refining Co., which is looking forward to the production of elemental sulphur from its smelter fume at Garfield, Utah, requested my permission to reproduce my articles on the subject in pamphlet form, which I was glad to concede. One of the West Texas sulphur companies approached me with regard to giving them advice as technical adviser, but no business arrangement resulted, and I definitely stated that I could not allow my name to be used in connection with the enterprise until after I had made a personal examination of the property, to be sure that they did in fact hold an available quantity that could be commercially exploited along the lines proposed. The West Texas Sulphur Co. also appealed for advice, which I freely gave, and without pay, because it was in the line of treatment of the material and had nothing to do with endorsement of the property, regarding which I have no positive information. I was, however, greatly surprised when a friend in Virginia sent me pamphlets containing abstracts from my articles published by the Toyah Valley Sulphur Co. of Houston, Texas. As a matter of simple courtesy my permission should have been asked. I know nothing of the company or its property. Let some should think that my name being used by them in this way implied that I had given an endorsement of their enterprise, I am obliged to make this disclaimer.

COURTENAY DE KALB,

Government Railroad Control Predicted: Cabinet Member May Be Possible Head

[Special Correspondence Manufacturers Record.]

Washington, D. C., December 10.

It is considered definitely assured that President Wilson will recommend that the present railroad situation be solved by placing the railroads of the country under Government control.

A special message to that effect is confidently looked for within a short time. Many in official circles expect that it will be presented to Congress within a week.

While there are objections to this point of view, as well as to the plan itself, the majority opinion seems inclined to believe that it is the only logical selection of the alternatives set forth in the recent recommendations contained in the special report of the Interstate Commerce Commission, in which was reviewed existing railroad problems and an indication given of the only manner in which they could be met.

While the unification of the railroads to the utmost extent, with control left to their present management, was one of the suggested ways of meeting present national requirements, it is pointed out that the concurrent necessity of financial aid renders unacceptable a character of private control coupled with the assuming of financial burdens by the Government. Those holding this view regard the choice by the President of the more extreme alternative offered by the Interstate Commerce Commission as unavoidable. They have in mind a radical element in Congress which would proceed with a demand for actual Government ownership, which can best be successfully offset by the selection of the extreme suggestion of the commission's recommendations, and which, with the Government ownership agitation present, would really constitute a compromise choice.

Thus far railroad officials have conducted no counter-propaganda against the obvious trend of events. There is no question, however, that they view with reluctance the present drift. At an open meeting with the newspaper representatives last week the members of the Railroads War Board, headed by Chairman Fairfax Harrison, went frankly into a discussion of the condition and needs of the railroads from the point of view of experienced railroad officials. Tribute was paid to the Interstate Commerce Commission's report as one which indicated a comprehensive view of the situation. It was unqualifiedly stated, however, that financial relief from any source at the present time would not immediately remedy conditions, and the assertion was made with much positiveness that no form of management would produce greater results from the existing plant and equipment than was being obtained from the present management. Among the difficulties being experienced was that of priority powers now vested in innumerable heads of Government bureaus and departments, through their possessed right of filing special priority licenses, which were almost invariably approved. As an illustration, it was stated that on the Pittsburgh Division, between Altoona and Pittsburgh, in the midst of the congested area, fully 85 per cent, of the freight is now being moved under priority orders. The intimation at the meeting was that a single Government head to pass on all priority orders before going to the Priority Committee, with Judge Lovett at the head, would greatly simplify the task of the railroads in so far as the Government's war shipments were concerned.

It is practically certain, however, that no immediate suggestions of this or any other character, designed to leave railroad control in its present hands, will prevail. Apart from more definite indications, it is held that the President's allusion to the railroads in his message to Congress, in which he indicated that a later communication on the subject might be expected, was significant that he had already made up his mind. The belief is that the special report of the Interstate Commerce Commission was designed to "break the way," and that it was not submitted without already having had the approval of the President, who preferred, however, that the initiative should be taken through that medium.

The expectation is that, with Government control

effected, the management will be placed under a single unit of control, with the one chosen to this important position ranking as a full cabinet member. Some talk has been heard that the new office will be patterned after those found in such organizations as the Food and Fuel administrations, but this has not received much acceptance. It is recognized that the importance of the position, considering the immense amount of capital involved, the hundreds of thousands of men employed and the vast field of inter-related interests concerned, surpasses that of many of the Government departments now presided over by cabinet members, and that it is scarcely second to the responsibilities imposed upon the Secretary of War or the Secretary of the Navy.

Speculation as to the choice for the position of "Secretary of Transportation," or whatever other title may be attached to the position, thus far has taken the negative form of pronouncing that it will not be any of the more prominent railroad officials of the country. In positive directions the indications are strong that it will be filled by a present Cabinet member.

Where Hampering Legislation Increases Coal Consumption and Halts Water-Power Development.

Atlanta, Ga., December 8.

Editor Manufacturers Record:

Your editorials in the issue of the MANUFACTURERS RECORD dated November 29, under the headings, "Shall the Government Cut Off Liquor and Race Horse Traffic, etc," and also "Don't Take the Pinchots Seriously," are timely, and I congratulate you on them, but you do not go half far enough or make enough noise.

Here are a few facts that make sane men sit up and take notice, and you will do well to press home to the public, and especially to Hon. R. S. Lovett and others in authority at Washington, these matters that are of such vital importance, particularly at this time.

You have many times written about the unfair legislation given water-powers, and I remember well the instance you once wrote of, how a big corporation could not, due to this unfair treatment, build a nitrate plant in the South, and so they went to Canada and this country lost not only millions of dollars, but the manufacture of a very necessary commodity. And yet we continue such men in office, whose gas bags are bigger than their brains!

Let me cite you some facts you may know nothing about, and which I am personally acquainted with:

The writer obtained for this company not long ago an order to furnish water-wheel units to supply electric light and power to replace engines and boilers, where the coal consumption each year alone cost more than the cost of the new hydro-electric units.

We were compelled to cancel this contract and the people that had the money in the bank to spend and who wanted this water-power plant were compelled to continue to burn coal and run an inefficient plant because the stream they were to dam for power was a tributary to a navigable stream and legislation would not permit them to build the plant. The excuse, as having come direct from the powers in charge at Washington and handed me, was that while it may be true this little mountain stream may be miles from any habitation and has never been or could be used as a navigable stream and may never have been used to float timber down and even hardly for fishing, yet it was a tributary to a navigable stream, and some day it might be necessary to float logs or railroad ties down it. This is a possibility so remote, and almost impossible, that it is ridiculous. Thus here is an example of the legislation you refer to in your "Pinchots" editorial, and where, had these folks been allowed to spend their money to build this water-power plant, hundreds of tons of coal could be saved for purposes we now know are most necessary.

Every horse-power of water developed means just that much more coal saved, and Germany realized this years

ago, and even saw to it that their water-powers should be developed. Due to the great initial cost of hydro-electric developments, some of these require outside financial help, and yet here in this country the legislation has been made to prevent water-power development instead of the Government stepping in with legislation, and, where necessary, assisting even with finances to encourage it.

While our manufacturing conditions are this year extremely difficult, due to labor and material market, we have just gone over our figures and find this past year from December 1, 1916, to December 1, 1917, the turbine water-wheels we have shipped will develop under the heads for which they were built a total of 37,229 horsepower. This amount of power developed in a steam plant and operating only 12 hours per day would require about 326,000 tons of coal to develop. Now, we are only one of the water-wheel builders in this country, and the water-wheels built and shipped during the past year are no doubt developing power that would require considerable over 1,000,000 tons of coal to develop.

Let me tell you a little about the manufacturing conditions as we find them now: We take an order for a water-wheel unit to replace an old inefficient water-wheel that is running a mill, or to replace engines and boilers or to replace electricity from a steam plant. We find that we may need certain steel in the manufacture of this unit that we do not have in stock. The Government has wisely established a price of \$3.25 per hundred at the mills, but unless we are building work actually for the Government we cannot obtain steel from the mills at all, but must depend entirely on what we can pick up from the jobbers or brokers, and we must pay them what they ask, and these are not under control by the Government. Now, after we have got this stock we are bothered by labor conditions, just like everybody is now all over the country, and these conditions are far from satisfactory. When this unit is ready to ship, our traffic department finds that to move stuff in certain directions means considerable extra expense, making trips and telephoning and telegraphing and getting special permits and to get around embargoes.

If you think it serious enough to write as you have about things not necessary to ship, is it not just as essential to press home for the salvation of the country some strong language to give the public and authorities an idea on the things that should be given priority?

There are no end of water-powers, small and large, today that want development, and the people behind them have the money to spend could they get the right to do so or get a fair price on the materials going into their manufacture and the assurance that they would get them after they had ordered them.

Therefore, is it not one of our greatest necessities to see the coal situation relieved by the Government encouragement of water-power development and the materials going into their development being given priority, and that steel be sold direct to the manufacturers of this material from the rolling mills?

H. H. WHITE.

Pit Silos of Concrete Increasingly Used in Texas.

Austin, Tex., December 7—[Special.]—The construction of concrete-lined pit silos in those parts of West and South Texas which have been hard hit by the prolonged drought is becoming quite general among farmers and ranchmen. It is claimed that this type of silo is more satisfactory and lasting than the overground kind. It possesses the advantage of being easily filled, and by means of proper equipment it may be emptied without difficulty. On account of the almost constant high winds in the plains region of West Texas, overground silos must be unusually well built. Some of the pit silos are of very large capacity. There was recently completed one of this type having a capacity of 500 tons upon the 1,280,000-acre ranch of Mrs. Henrietta M. King in the lower Gulf coast region, and others of similar capacity will be built. The prolonged drought has taught the ranchmen and farmers the necessity of conserving as much feedstuff as possible. Indications now point to the growing of more feedstuff in Texas next season than ever before. Many farmers and ranchmen are preparing to plant largely increased acreages of forage and grain crops. With the use of silos it will be possible for two or three years' supply of silage to be stored.

The Nation's Shipbuilding Activities: Ships of Steel and Ships of Wood Building and to Be Built

[Special Correspondence Manufacturers Record.]

Washington, D. C., December 10.

The greatest construction task ever attempted by a single institution now engages the Emergency Fleet Corporation, an instrument of the United States Shipping Board. In 116 shipyards the corporation is building 1118 ships at a cost of more than a billion dollars.

The really vast work of the board and its corporation is explained in the board's first annual report, recently issued, which tells of all accomplishments up to November 1.

An organization of more than 1000 employees, including a large force of technical experts, now controls, on behalf of the corporation, substantially all the shipbuilding of the country other than that of naval vessels. The program calls for the completion next year of eight times the tonnage delivered in 1916.

Regarded generally as a creation for belligerent and temporary purposes, the organization is part of the administrative machinery of the Government, designed, in time of peace, to promote the development of an American merchant marine and to regulate foreign and domestic shipping and to exercise emergency powers to meet the shipping problems of the war.

Of the war powers, the most important are administered through the Emergency Fleet Corporation. This is not co-ordinate with the board, but subsidiary, having been organized by the board last April, under the laws of the District of Columbia and with a capital stock of \$50,000,000, for reasons of practical convenience and effectiveness. In other words, the corporate medium enables the board to put on a competitive equality with private shipping such vessels as are operated under Government appropriations. The corporation's power to operate ships is greatly restricted, but its power to build ships is limited only by the extent of appropriations. Edward N. Hurley is president of the corporation; John A. Donald, vice-president; Charles A. Piez, second vice-president, and Rear-Admiral F. R. Harris, general manager.

Discussing the ship construction program, the report sets forth that "when the United States entered the war, American shipbuilders were principally engaged in the construction of ships for foreign account, principally British and Norwegian ships. The yards were working substantially at capacity. The problem, therefore, was not merely to build new ships, but also to build new yards in which more ships might be constructed.

"To this end contracts were placed for a large number of wooden ships, most of them to be built in new yards, it being found that such ships could be built, provided certain limits were observed, without interrupting the steel ship program."

As to the various reported obstructions in the way of getting sufficient timber from the South and West to build the wooden ships, the report says briefly:

"The corporation has experienced some difficulty in arranging for supplies of proper lumber, but it is believed that this difficulty has been largely overcome, and that the wooden ships may be expected to be completed with a fair degree of promptness."

Concerning steel vessels the report displays more loquacity. Every effort, one learns, has been made by the corporation to standardize designs for steel construction, though it is considered inadvisable to set forth the plans in detail.

Authorized by the President's order of June 11, the corporation requisitioned on August 3 all steel ships then under construction whose capacity exceeded 2500 tons dead weight. The nation thus became possessed of 413 ships in various stages of construction, which, when completed, would measure 2,937,808 tons. Thirty-three of the ships have since been finished, and the remainder will probably be delivered within the next year and a half. "The problem of compensating the shipbuilders for the requisitioned ships has been solved to the satisfaction of nearly all such builders, but the problem of compensating the former owners of the vessels has not yet been fully determined."

Rapid progress has been made in contracting directly for ship construction. Within the three months end-

ing October 31, 140 more wooden ships were ordered and 235 more steel ships. At the close of October contracts had been signed for 375 wooden ships, 305 steel ships and 68 composite ships, a total of 738 bottoms. Adding the 413 vessels that were requisitioned August 3, as heretofore told, raises the total to 1151 vessels, a truly great fleet.

The tonnage obtained is distributed as follows: Wooden construction, 1,330,900 tons; composite, 207,000 tons; steel, including the 2,937,808 tons in the requisitioned ships, 5,220,808, or a total of 6,758,708 tons.

In addition there are prospective contracts for creating 199 additional steel ships to have a dead-weight tonnage of 1,100,000 tons. Completion of the additions would make the grand total 1350 ships measuring nearly 8,000,000 tons.

The expenditure on account of contracts signed directly by the corporation up to October 31 will amount to \$637,654,008. This is divided into \$545,113,498 for ships or hulls; \$62,800,000 for making complete ships out of 314 wooden hulls; \$16,000,000 for cost of plants for fabricated steel ships; \$5,500,000 for home office and district office expenses (up to June 30, 1919); \$3,175,110 for estimated increase in cost of materials; \$3,360,000 for cost of plants, equipment and ways for wooden ships; \$1,305,400 for estimated cost of wireless installation on complete ships; and \$400,000 for estimated additional cost of two steel barges.

Inasmuch as the funds, appropriated or authorized, which are available for ship construction sum up to \$1,319,000,000, the foregoing expenditure of \$637,654,008 can be accomplished by taking less than half the cash in sight, the balance being \$681,345,902. Some nineteen millions of this balance is reserved for the construction of plants.

For the operation of ships, \$5,000,000 was authorized; for the purchase of ships, \$150,000,000; and for the requisitioning of ships, \$515,000,000. Rather more than half of the authorization has been appropriated.

Upon the unusual plan of recruiting an ocean-going fleet with ships from inland waters, the report declares that "an unprecedented number of newly-constructed ships have been brought down from the Great Lakes, in addition to 21 steel steamers requisitioned from lake commerce. Sixteen of the steamers, too long to pass the locks, were cut in two, brought down in halves, and reunited on the St. Lawrence River. Twelve vessels were even put together while afloat, an achievement never before accomplished."

By authority of Congress transmitted through an executive order, the board formally seized the 91 ships of German registry, and of 594,696 tons altogether, which were interned at American ports when this country entered the war. The seizure being grounded upon the constitutional power of Congress to provide for the forfeiture of enemy property, no question of compensation to the enemy owners could arise, and no money has been appropriated or paid for on account of the board's action.

No little thought has been given by the Shipping Board to the subject of the labor engaged in the board's gigantic task of ship construction. The report correctly maintains that "in the last analysis it is man power that builds ships; and the mobilization of a large, competent, trained and willing force of workers for the shipyards of the country has been among the most important of the corporation's activities. An industrial service department has been organized to aid in the solution of the problem.

"That problem has been threefold: First, getting men; second, keeping men; and third, fitting men for their respective tasks."

The Department of Labor has helped the Emergency Corporation to enroll men for the shipyards. A large development of this work will ensue when the department, in connection with the corporation, shall have established recruiting centers to assemble shipyard workmen.

With the co-operation of the heads of the international labor unions a far-reaching scheme of industrial

education has been put into operation. An instructor-training center has been established at Newport News, to which from 75 to 150 skilled mechanics are to be delegated by selected yards for a six weeks' course that will teach the students how to impart most effectively a knowledge of their trades to recruits in the shipyards. After six months the graduates of this center, and of such others as may be established, will be in a position to initiate 75,000 new workers, mostly from kindred trades, into shipyard employment.

The housing of the new workmen, especially at the new yards, has presented to Mr. Hurley and his associates a serious problem, to meet which comprehensive plans will be adopted.

\$10,000,000 Shipyards Chartered.

Shipyards will be operated by the American Shipbuilding Corporation of Alexandria, Va., which has been incorporated with a capitalization of \$10,000,000. The officers named are: President, Colon H. Livingston, president of the Washington & Old Dominion Railway and the Chesapeake & Potomac Steamboat Co., and vice-president of the American National Bank, Washington, D. C.; vice-president, B. W. Morse; vice-president and secretary, B. G. Higley; treasurer, H. F. Morse, each of New York. Charles W. Morse, William Guggenheim and G. W. Loft, each of New York; Robert Jackson of Concord, N. H., Davis Elkins of Washington, and R. Lancaster Williams of Baltimore, with the officers named, are the new company's directors.

Shipyards for Southport, N. C.

The International Navigation Co., W. H. Garland, president, Wilmington, N. C., is reported to have determined upon Southport, N. C., as the location of its shipyards previously mentioned as planned for Wilmington. Outlining the plans for Southport, dispatches state: Purchased 600 acres land, including two-mile waterfront on Cape Fear River, near Southport; build plant to construct vessels, dredge Price's Creek and widen to 400 feet for land-locked basin; has let contracts for five large cement buildings, cement docks, 100 cottages for skilled laborers, 100-room hotel, bank building, etc.; said to have initial contracts for 60 monolithic vessels and 30 wooden vessels.

Organized Efforts to Train Men for Shipbuilding.

The training of men for shipbuilding has already begun in an organized way. The Government is fostering the work and individuals are giving their active co-operation.

The first move in this direction was made at the Newport News Shipbuilding & Dry Dock Co.'s plant, where a training center was established through the initiative of the late Admiral Bowles, having for its object the training of instructors who will serve as trainers of other men in shipbuilding occupations.

Charles R. Allen, State agent in charge of industrial training for the State of Massachusetts, has been given leave of absence to serve as expert in industrial training and as local manager of the Newport News training center.

Associated with Mr. Allen as members of an organizing staff are James E. Neary, who was in charge of apprenticeship training for five years at the Fore River shipbuilding plant, and H. C. Waugh, who resigned from his position as instructor in industrial education at Seattle, Wash.

The work is under the direction of the Emergency Fleet Corporation.

Attendants at the school are from all parts of the country, from Tampa, Fla., to the head of the Michigan peninsula, and from New York to the Pacific Coast.

It is not proposed that men shall be taken from productive work to receive instructions from those who will be trained at this instructors' training center. Men in the local yards will receive instructions which they need in order to become better shipfitters, riveters, loftsmen, shipwrights, ship caulkers, blacksmiths, sheet-metal workers, ship carpenters, etc.

The American International Shipbuilding Corpora-

tion, whose new plant is at Hog Island, Pa., near Philadelphia, has also established a training course in shipbuilding.

The instructors in the school are all practical men, qualified to teach the various shipbuilding trades. Unskilled men while being trained as riveters, reamers, chippers, caulkers, erectors, riggers, shipfitters, etc., are to be paid 30 cents an hour while learning, and as soon as they have mastered their trades will be advanced to the trade at prevailing wages. Rivet heaters are paid 24 cents an hour while learning and have an opportunity of advancing to the skilled classes. The training is to be intensive and extends from a few days to six weeks, depending upon previous training and the trade. The school covers practically all of the trades necessary in the building of fabricated steel ships. The booklet issued by the company gives the list of trades taught and a brief outline of the work required in each.

The company has a large contract from the Government for fabricating steel ships, which are to be built 50 at a time.

Big Shipyard for Pensacola.

Government contracts for building vessels to cost from \$15,000,000 to \$20,000,000 are under negotiation by the Ketler-Elliott Erection Co. of Chicago. If the orders for building these are secured by this company the shipyards will be located at Pensacola, Fla. Paul P. Stewart, representing the company and conducting negotiations at Washington, wires the MANUFACTURERS RECORD that later he will furnish full particulars for publication.

Shipbuilding News of the Week.

A five-acre tract of land near Harrisburg, Texas, on the Houston ship channel, has been leased by the Houston (Texas) Shipbuilding Co., which plans to establish shipyards for the construction of ocean-going barges. Arthur Boyce of Dallas, Texas, is this company's president.

Clement M. Egner of Elkton, Md., and associates have incorporated the Ethel Ship Corporation with a capital of \$175,000.

Contract for building shipways for six 9500-ton vessels has been awarded to the J. W. Fitzgerald Company of Savannah by the Oscar Daniels Company of New York for its shipyards at Tampa. The Daniels plan for Tampa shipyards was announced recently, and it was stated that \$300,000 will be expended for plant betterments.

First National Hog Company.

Plans of the First National Hog Co., Raymondville, Tex., organized in November, are detailed in a letter to the MANUFACTURERS RECORD from the company's president, W. A. Harding of Minneapolis.

"This company's plans include 10,000 rods of woven-wire fencing, which will be sixty inches high around the outside of the ranch and thirty-nine-inch fencing for subdivisions. Three ranchhouses and five houses for Mexican labor, barns, machine sheds, blacksmith shop and corn cribs will be of the usual construction used in the South. The two silos will be reinforced concrete. The elevators or grain warehouses will be of concrete construction with a capacity of 20,000 bushels of grain. The watering system will consist of a 1200-foot artesian well, with several hundred rods of underground pipes leading to various parts of the ranch.

"Our bill for implements will approximate \$20,000, and we shall in all probability buy almost the entire line from some single large manufacturing maker of farm implements. The present status of our company is this: We have at the present time over half of the \$350,000 capital subscribed and are making rapid progress along this line. We expect to begin actual operation of developing on the ranch within the next sixty days."

The State of Pennsylvania is making extensive preparations to keep highways open through winter. It is estimated that 200 trucks per day are now passing through the State to the seaboard from Western manufacturers.

New Coal Mine Operations Under Government Regulations

[Special Correspondence Manufacturers Record.]

Washington, D. C., December 10.

Considerable misapprehension exists among those interested in small or new mining enterprises with respect to a statement issued last month by the Fuel Administration regarding the attitude which it would observe toward the development and output of new coal mines, especially those of small capacity, ranging under 250 tons production a day.

At the time the statement was issued it was intended that a regulation covering the subject, the text of which was then given, would follow at once. Final decision on the matter, however, has since been held up, pending a further consideration of some of the features involved.

In general, the information which received circulation at that time left the impression that new mines opened before September, 1916, but not actually producing coal by January, 1918, would not be permitted to sell their output at a profit under any circumstances, unless the average daily output exceeded 250 tons.

For other mines opened before the time indicated, with no expectation of actual outputs before next January, it was understood that, if the daily output exceeded 250 tons, they would be allowed to sell their product at a profit of 15 cents a ton over and above the actual cost of production and placing at the mouth of the mine such cost to be established by the filing of acceptable cost statement sheets with the Fuel Administration.

There was no thought on the part of the Fuel Administration, it was said today, of preventing anyone from opening new mines. Rather was the proposed action designed to discourage such attempts where, under normal conditions, the cost of operation would occasion actual loss of capital to the investors, once the abnormal conditions now prevailing should have disappeared.

The object, therefore, was to indicate to prospective

operators of new mines that they need not expect the Fuel Administration to encourage them in ventures which merely had in view the reaping of profits from a market dependent upon the maintenance of a high level of prices, such as the war has produced.

This consideration, of course, was based on the assumption that the prices set by the Government in the different districts, and for the different grades of coal, would not be adequate to meet the cost of production. There was not intended to be conveyed the idea that the Government prices would not be allowed to be operative in these new mines, just as in all others. So far as the Fuel Administration is concerned, however, all the cases that have been brought to its notice have been those in which additional price allowances have been held necessary.

A further phase is that not only will there be no prohibition of an allowance of the customary Government price, but that the additional charge of 45 cents a ton may be made where the usual conditions are involved; that is, where mutual agreements between operators and miners are in force, with the required penalty clause applicable to either party to the agreement in case of failure to keep the output up to the point of standard and uninterrupted production where not prevented through legitimate causes.

A new order, making clear these and other features about which there has been considerable misunderstanding, based on the terms of the statement issued in November, will probably be issued by the Fuel Administration this week.

An important point in connection with the whole situation was cleared up by the statement of the Fuel Administration officials today, to the effect that the order will not bear in any way on any mines, new or old, large or small, now actually in operation and turning out coal.

under full headway, and Yazoo county, that has shipped \$125,000 worth of livestock this year, has promised to ship one solid trainload of hogs of 20 cars, the first ever to leave a Southern State, so far as is known here. The value of the trainload of porkers would be well beyond \$50,000, and would represent in a single shipment more hogs than many counties ship in 12 months.

The tremendous soy-bean crop of the present year is fattening thousands of hogs, and farmers are receiving from \$3 to \$3.50 a bushel for what beans they sell. This means an added value of \$60 an acre to every acre planted in the beans, which grow with the corn crop and help the corn.

Eradication of the tick and widespread knowledge of how to prevent hog cholera have been added to the State's magnificent possibilities as a livestock country, and the real development is expected to come during the next 12 months. Mississippi may be relied upon to do her bit in the way of meat production.

Large Deposit of Volcanic Dust Found in Texas.

Austin, Tex., December 8.—[Special.]—Dr. J. A. Udden, director of the Bureau of Economic Geology and Technology of the University of Texas, recently made an exploration trip through Garza county, situated in the western part of the State. The results of his investigations may prove of great importance. He said:

"I had the good fortune to discover a large deposit of volcanic dust, which appears to cover several sections of land in the southwestern part of Garza county. Three years ago, on a visit to the northern part of the Panhandle, I found another deposit of this material on Duck Creek, in Kent county. Volcanic dust of this kind has been found in Kansas, Nebraska and Oklahoma, and it has been to some extent marketed and used for various purposes, such as for non-conductive packing, as an abrasive, in lava soaps, polishing powders, cleansing powders and as an admixture for tamping dynamite. The finest grades are said to have been used also in white paints."

Good Roads a War Necessity Deserving Government's Active Aid

HIGHWAY OFFICIALS OF 38 STATES URGE IMPORTANCE OF ROAD BUILDING NOW AND OF MAINTENANCE AT ALL TIMES—PROJECTS IN HAND CONTEMPLATE ANNUAL EXPENDITURE OF \$200,000,000.

[Special Correspondence Manufacturers Record.]

Richmond, Va., December 6.

We believe that while every effort of every industry and occupation must be first directed towards carrying this war to an early and successful end, nevertheless the prosecution of highway work is essential, both as a war measure and as an economic measure, and the adoption by the nation, by the States or by other municipalities of a policy of half-hearted prosecution of highway work would be an irreparable blunder. We recommend to the several States care in the selection of improvements, so that there shall be first improved those roads of the greatest economic value in the present crisis. From developments so far it seems inevitable that the present means of transportation will become utterly inadequate and must be supplemented by motor transportation over the main arteries, and every step must be taken to put these arteries in condition to take and to withstand this traffic.

Especially do we recommend to all highway officials an intensive program of maintenance. Roads which have been built must be saved, and we trust that the executive committee will use every effort to insure that the national authorities give especial consideration to the movement of all materials to be used in maintenance.

We recommend that in the present emergency all convicts and other prisoners, the harmlessly insane, war prisoners and alien enemies be used in so far as possible in industry and in road construction, and urge legislation to this end.

We recommend to all highway departments a campaign of education and publicity so that all the people may be fully informed of the necessity, particularly at this time, of continuing a sane program of road construction and intensified maintenance, and of the important place these matters have in the program of prosecuting the war.

We reiterate our faith in the Federal Aid Road Act, and believe that it has done more for the cause of road improvement than any other one influence has ever done. We do not believe that amendments to it should be urged or made until it has been fully tried out in its present form. We respectfully urge upon the United States Department of Agriculture a more liberal interpretation of its provisions, and that the authority of the District Engineers in regard to projects, plans and construction be extended, so that the purposes of the act may be accomplished with the minimum delays.

We commend the appointment of the Highways Transport Committee by the National Council of Defense, and express our appreciation of the attendance here and the address by its chairman, Roy Chapin; and we urge this committee to give immediate consideration to all problems coming up in the present emergency and urge them to give us every help possible in securing for road improvement and maintenance the consideration due these great necessities at this time.

We recommend most earnestly uniform legislation regulating motor traffic over public highways in the United States, to the end that these highways may be constructed and maintained without unnecessary expense to the public.

The above were the resolutions adopted by the American Association of State Highway Officials at its annual meeting held here this week. They stand as the conclusions of three days' intense, earnest and full discussion by the official representatives of highway work in 38 out of the 48 States in the Union, covering many of the complex problems that are facing them in their work.

The meeting was indeed an inspiring one from every

standpoint, because to the observer it conveyed beyond any question that the problem of Federal aid in co-operation with the States is working out to a degree of satisfaction that will eventually far exceed even the fondest hopes of the framers of the bill. This broad statement is based upon a close observation of the character of men charged by the several States and by the Federal Government with carrying this work forward. The spirit and attitude of these engineers and officials, although coming from every part of the country and involving all kinds of conditions and ideas, were those of co-operation and a successful effort to reach a common ground among themselves and with the Government whereby the road work of the nation could be carried on along definite co-ordinated lines to provide State and National road systems that will prove of the greatest benefit to the people.

The great importance of the meeting was evidenced by the fact that the members are officials in charge of carrying out road-building plans that involve an annual expenditure of approximately \$200,000,000, and as 38 States were represented, the work of the association and its conclusions do indeed truly represent the combined official thought of the nation on road improvements and must therefore command the attention of the country as a whole and the Federal officials particularly.

Recognition of the importance of the meeting was given by the attendance of Director Logan Waller Page of the Office of Public Roads; Chief Engineer P. St. J. Wilson, Chief of Management A. E. Pennybacker, Assistant Chief Engineer A. E. Loder, Assistant to Director A. L. Luedke, Chief of Research and Tests Prevost Hubbard, Editor Jules Goldberg, and all of the 10 district engineers in charge of Federal aid work for the Government. Chairman Roy Chapin of the recently-created Highways Transport Committee, under the Council of National Defense, was also present, and not only fully outlined the aims and purposes of the committee, but also brought an official message of hope and inspiration from Judge Lovett of the Priority Board regarding the expected possibility of lifting Priority Order No. 2 by April 1 or sooner if conditions would permit.

One entire session of the convention was given over to a thorough discussion and interchange of views on all phases of the problems presented in Federal aid road work. Director Page read a very illuminating paper covering one year's experience with the Federal aid road law; A. E. Pennybacker discussed project agreements, and Chief Engineer Wilson explained various engineering features of the work. These were followed by a general discussion, and the various State highway officials asked many questions covering special and perplexing problems that were confronting them. These were all fully explained by Mr. Page and his assistants and gone into with much detail. Consequently, out of this one session of thorough and full discussion came results of tremendous value and importance to every State official present, so that this session alone may be said to have been worth in itself many times the cost in time and expense to those coming to the meeting.

These discussions also brought out very distinctly the fact that the attitude of the Office of Public Roads was one of thorough co-operation with the States and a desire to be as liberal as possible in interpreting the meaning of the act in order to further to the fullest degree the construction of Federal aid roads.

One of the most interesting discussions was that on "Military Roads, Why and Where." The principal paper on this was delivered by Col. Wm. D. Sohier of Massachusetts, who presented many illuminating facts covering military roads under war conditions in France and England, and then touched upon what should be done in this country, and said: "I fear the people of this country, and particularly our legislators, are not really awake to the tremendous importance of good roads if this country is to do its part in the world's war. They are important not only from a strictly military point

of view, but they are absolutely essential if the country is going to grow and harvest its crops and supply not only our own soldiers, but our Allies, with the food they cannot live without.

"No doubt, as our railroads are becoming congested and it will take considerable time before they are enlarged sufficiently to take care of the traffic, the highways will have to do more and more of the actual transportation of the country. In some instances the best that can be done may be to connect the rich farming community with its railroad center, having in view, of course, the possibility of a continuous through line later to connect with some other large center. In other places the route or main line will be a through highway that will enable the large centers of manufacture or where agricultural concerns are concentrated to move their stores by motor truck whenever that becomes necessary."

Colonel Sohier outlined in detail the tremendous requirements of a military road and the amount of traffic it must bear, and pointed out how these roads must be materially strengthened to stand such traffic. Among the most important phases of Colonel Sohier's talk were quotations he gave from letters from eminent military authorities showing that they fully recognize the absolute necessity of good roads from a military point of view.

From expressions of Major-General W. M. Black, chief of engineers, extracts are quoted as follows: "The requirements of a military highway do not differ in any material respect from those of a highway for modern commercial purposes. In practically all cases roads which are valuable in a military way are those connecting important commercial centers. Of course, there are some cases where roads interconnecting certain defensive works or connecting such defensive works with neighboring commercial centers are needed for strategic and other military purposes, but the number of such cases is small compared with the total length of roads useful for military purposes. As you are probably aware, there were introduced at the last Congress two bills (Senate Bill No. 2470, by Senator Chamberlain, and House Bill No. 3165, by Representative Dent) which provided for a comprehensive system of military highways for the United States. It is believed that it is only in some such way as this that the problem of military highways will ever be satisfactorily solved; that is, to consider the needs of the United States as a whole, to work out a project to meet such needs and to complete such project in the order of the relative importance of the roads making up the project."

Major-General Leonard Wood is quoted in part as follows: "Of course, war demands a nation's entire resources, and the most efficient means of delivering them are needed. Thus a systematic, well-planned network of roads which can be regularly used commercially is not only a good investment, but may be of tremendous value to our military forces. While hastily or improperly built roads should not be rushed at this time on the chance that they might be of some strategic value to our armies, substantial highway construction of economic value should not be curtailed because we are at war. Through routes, connecting centers of production or population, aid in the prosecution of war by providing additional facilities for transportation of men and supplies. To be of value to armies in campaign, roads should be paved for a width of not less than 18 feet and preferably 20 feet, and the total width between inside edges of ditches should be at least 30 feet. This will provide for two lines of motor trucks and allow a space on either side for emergency repairs of broken-down vehicles or the movement of troops."

"Only the highest types of standard pavement surfaces answer the requirements for military roads completely. Wearing surfaces not suitable for use in our cities will not stand up under concentrated highway traffic. Methods of construction or types of surfacing which are used to cheapen the first cost at the expense of the requirements of a military road should not be used. They are also proving uneconomical under modern commercial traffic."

"In conclusion, I would urge consideration of road construction paralleling our Eastern seaboard, particularly in those localities where important fortifications exist with no first-class connecting road. No one can foresee the outcome of the present crisis nor those crises which will follow. These matters of preparedness, which cannot be handled over night, should be considered well beforehand and provided for while we still have time and our Allies to defend us."

Major P. S. Bond, United States Army Engineering Department, was quoted in part as follows: "Good

roads and railroads increase the useful productive capacity of our mines, fields and forests. Every road in every part of the land which connects a producer of any commodity with a shipper or consumer of that commodity will play its part in enabling the nation to bring to bear its full strength in armed conflict, and the better the road the more perfectly it plays its part. A country-wide system of military roads, with a marginal highway around the entire country, will do much to solve this problem if it is properly prosecuted. Our splendid railroads will be of little use to us unless we complete our distribution system and are prepared with good trucks and good roads to distribute supplies to points where they are needed."

These expressions of high military officers not only stress the needs of road for military purposes and the importance of building them now in order to have them in case of invasion, but they also point out the great value of roads in peace times, a double view which unfortunately many important civilian officials do not seem to grasp.

In the course of a very illuminating address, Chief Engineer H. G. Shirley of Maryland explained in detail a graphical chart showing how he had worked facts and data to determine the exact extent to which a road had been used, including number and tonnage of vehicles, cost of maintaining the road, etc. He also reported other important scientific studies made of Maryland's road problems that appealed with more than special interest to the officials.

In fact, it may be said that the many methods of research and study of traffic conditions and their effect on road maintenance, materials and methods of construction, the work of the laboratory and the designing-room and accounting department are all showing that the construction and maintenance of the modern highway today is no longer any rule-of-thumb work, but has been developed to a highly scientific point where the modern State highway engineer knows beyond question all the influences, to the smallest degree, that must be followed to get certain definite results.

Nearly every speaker touched upon the growing use of the motor truck. As indicated by Chairman Roy Chapin of the Highways Transport Committee, "we are passing through an evolution of transportation methods and we should recognize that the motor truck is a fixture and build our roads to meet it." It was also considered very important that uniform laws be established throughout the country regulating the loads of trucks, so they could be prevented from tearing the roads to pieces. In this work the highway departments are receiving the close co-operation of motor-truck manufacturers, who are equally anxious to have motor trucks properly operated, but not in a way that will tend to bring them into disfavor by damaging the roads, all of which can be overcome by regulating tonnage and tire widths.

One vital question commanding attention was that of road maintenance, and much concern was expressed that a continuation of Priority Order No. 2 during the winter would deprive the roads of maintenance materials, which would result in almost irreparable damage to some of the much-traveled highways. In a special recommendation it was urged that efforts be made to have the Priority Board modify Order No. 2 at the earliest possible moment and order the definite release of enough open top cars to the various highway departments to provide for maintenance and improvement of the main highways.

For the ensuing year officers were elected as follows: President, Wm. D. Uhler, Harrisburg, Pa.; acting secretary, A. D. Williams, Charleston, W. Va., and executive committee, H. G. Shirley, Maryland; T. H. MacDonald, Iowa; Ira R. Browning, Utah; L. A. Stevens, New Jersey; Max L. Cunningham, Oklahoma; Paul D. Sargent, Maine; W. S. Kellar, Alabama; Charles F. Sterns, California, and George P. Coleman, Virginia.

W. H. STONE.

The Cotton Movement.

In his report of December 7 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 129 days of the season was 6,095,360 bales, a decrease under the same period last year of 1,608,271 bales. The exports were 1,832,236 bales, a decrease of 764,680 bales. The takings were, by Northern spinners, 1,107,858 bales, a decrease of 319,752 bales; by Southern spinners, 1,836,286 bales, an increase of 26,813 bales.

The Petroleum Industry Might Be Injured by Too Much Regulation as Was Coal

[Special Correspondence Manufacturers Record.]

Washington, D. C., December 6.

With the pressure for an increased production of coal to an extent that will double the increase of 50,000,000 tons already achieved last year, in order to meet the abnormal demands created by war, the various agencies of the Government have devoted a comparatively slack consideration to the petroleum supply of the nation.

This question, however, is coming to the fore. Not only is it one which calls for serious attention as regards the oil supply of the United States, but the larger aspects involves possible moves of the enemy in other parts of the world. The German machinations since the outbreak of hostilities have been unceasingly operative in Mexico, and to no small degree have been directed against the vast output of petroleum from the Tampico district. This source of supply, it is understood, is the chief reliance of the British navy for its liquid fuel, and if Carranza should carry out his reported intention to invade the Tampico oil field, the state of the supply in this country would immediately become a matter of the first importance.

Only a few days ago it was indicated by the Fuel Administration, in answer to an inquiry made by the MANUFACTURERS RECORD correspondent, that the question of an adequate supply of petroleum was not creating any anxiety in that quarter, for the present at least. It was stated by the Fuel Administrator that he had already conferred with California representatives of the petroleum industry. Just what transpired was not divulged, but the further statement was made that there is every reason to believe that there will be no shortage during the remainder of the present year. At the same time, mention was made of the reserve stocks, in general terms, with the intimation that the absence of any likelihood of an immediate shortage was based on the fact that these reserves were available to draw upon.

A bulletin just issued by the United States Geological Survey furnishes more specific information on the subject.

Expressed in terms of barrels of 42 gallons each, the report of the Geological Survey shows the amount of crude petroleum marketed, consumed and held in stock in the United States during the first nine months of 1917, as follows:

Marketed, 254,249,000 barrels; apparently consumed, 264,072,000 barrels; in stock September 30, 164,249,000 barrels.

There was, of course, a surplus remaining over from the production of the previous year, else there could not have been any stock remaining on hand, in so far as the market was concerned, as the amount consumed during the first nine months of the present year was greater by nearly 10,000,000 barrels. This balance on hand on December 31, 1916, was placed at 174,028,351 barrels.

During the first nine months of 1916 the amount of petroleum marketed reached a total of 222,865,499 barrels, or nearly 22,000,000 barrels less than marketed to and including September of the present year. The apparent consumption for the first three-quarters of 1916 was 226,091,902, or approximately 38,000,000 barrels less than during the first nine months of the present year. For the entire calendar year of 1916 there were 300,767,158 barrels of petroleum marketed and 312,438,599 barrels apparently consumed.

Expressed in percentage comparisons, the statistics given indicate an increase of 14 per cent. in the quantity of petroleum marketed during the first nine months of 1917 over the corresponding period for the preceding year, and of nearly 17 per cent. in the quantity apparently consumed for the same period this year as compared with the corresponding 1916 record.

The net decrease in stocks during the first nine months of 1916 was 3,226,453 barrels, or about 2 per cent. of the reserve on hand on January 1, 1916. The net decrease in stocks during the first nine months of the present year was 9,779,000 barrels, or about 6 per cent. of the reserve on hand on January 1, 1917, and about 5 per cent. of the reserve on hand 12 months previous. The average daily draft on stocks in September of this year was 44,550 barrels, while the average daily draft

for the first nine months of the year was about 36,000 barrels.

The monthly totals for the year 1917 and the first nine months of the present year, as given by the Geological Survey, are as follows:

Month.	Quantity marketed	Apparent consumption.	Stocks at end of month.
Dec. 31, 1915	185,809,792
January	23,181,022	21,115,549	187,965,265
February	22,733,550	21,126,277	189,572,538
March	25,523,666	25,755,303	189,310,901
April	24,024,447	24,804,985	188,590,563
May	26,015,713	25,418,752	189,157,324
June	25,539,611	26,563,582	188,132,353
July	25,379,700	24,229,287	189,287,766
August	25,206,566	28,328,130	186,162,202
September	25,261,174	28,750,037	182,673,339
October	26,747,529	28,215,247	181,005,621
November	25,301,138	28,438,809	177,867,359
December	25,853,042	29,692,641	174,028,351
Total 12 months	300,767,158	312,438,599	174,028,351
Total 9 months.	222,865,499	226,091,902	182,673,339

Month.	Quantity marketed	Apparent consumption.	Stocks at end of month.
January	27,431,000	28,056,000	173,402,000
February	29,399,000	24,859,000	172,903,000
March	28,448,000	29,338,000	172,013,000
April	27,628,000	27,996,000	171,644,000
May	28,297,000	29,223,000	170,606,000
June	29,529,000	29,034,000	169,498,000
July	29,529,000	31,050,000	167,977,000
August	30,457,000	32,804,000	165,631,000
September	30,735,000	31,657,000	164,249,000
Total 9 months.	254,249,000	264,072,000	164,249,000

The rise in the price of oil, crude and refined, has been almost insignificant in comparison with the rise in cost of other natural products of the mines and the fields. Owing to the excellent work done by the Petroleum Committee, the distribution of oil to the American navy, the army, the Allies and the public has been equitable and smooth-running.

There is a general fear in Washington that Professor Garfield of Williams College, who is the Fuel Administrator, will upset the rather delicate organization of the oil industry by putting into effect some arbitrary plan such as the one that worked so disastrously in connection with the coal situation.

It is almost inconceivable, however, that with the navy, the Allies and the public making no complaints, the Administration would tamper with a satisfactory situation when it is realized what has happened in the coal situation, where the price was cut down at the mines only to go high to the consumer and grow steadily shorter in supply.

Production of Steel Ingots, Gross Tons, 1917.

Reports to the American Iron and Steel Institute from 29 companies, which made 88.14 per cent. of ingots in the previous year, show:

	Total first six months.	Third quarter July-Sept.	Total first nine months.	
	Open-hearth	Bessemer	Other	
	13,681,463	5,164,139	2,411,108	20,286,581
			24,435	7,575,247
Total	18,900,820	9,034,591	27,925,411	
	Total nine months.	October.	Total eleven months.	
	Open-hearth	2,475,754	2,384,218	
	20,290,531	870,494	25,140,505	
	7,575,247	772,489	9,218,280	
Other	79,633	5,687	9,550	94,850
Total	27,935,411	3,351,935	34,453,603	

The total ingot production of the country for the year 1917 is estimated at 42,600,000 tons.

Work Commended.

J. M. WEAVER, General Manager Standard Cement Construction Co., Wilmington, N. C.

We wish to express our commendation of the great work you are doing in the timely editorials appearing weekly in the MANUFACTURERS RECORD. Keep up the good work!

Plan to Lessen Food Shortage By Organized Farming Associations

By D. M. BLANDING, Sumter, S. C.

I have read with interest your late comments upon the lowering of our agricultural potentiality by the shift of population from the country to cities and towns during the thirty years from 1880 to 1910. Our total population is now estimated at some 105,000,000. If the shifting process has progressed in the same ratio for the past seven years, our urban population must now be in the neighborhood of 50 per cent. of the whole, or something over 50,000,000 people.

American development has progressed markedly along the lines of co-operation and organization. This has appeared in all lines of industry except in that of agriculture, and, as you suggest, it is probably the lack of it in agriculture that has had much to do with the drawing the people from the farms. The average farming unit in the South today is probably in the neighborhood of the two-horse farm. Does not this entail an uneconomical overhead management expense? Could not the qualified farmer manage a ten-horse farm with as much success as he manages the two-horse? What has fixed the two-horse farm as the unit? Is it not lack of capital among the individual farmers?

The fifty-odd million people of the towns and cities are mostly dependent on wages and salaries. Just at this time, in the face of soaring prices of foodstuffs and necessities, wages and salaries do not go far. The great majority of these people are feeling the pinch of prosperity, and are liable to feel it more acutely.

Of all the happy-go-lucky, haphazard methods of our feeding problem, the distribution element has been the most uneconomical. The ways from the producer to the consumer has been tortuous and devious.

May not our urban population organize to feed itself more economically? May it not put needed capital at this time to advantage into the movement to increase the food supply of the world?

The well-known building and loan associations, among us everywhere, have been largely instrumental, with their weekly and monthly installments, in enabling this same class of people to become home owners. The demands for a definite supply of purchasable food is even more insistent than home ownership. It is the most elemental problem that we have. Can the methods of the building and loan associations be applied to this problem to advantage?

Suppose we organize farming associations or companies, with the shares payable in weekly or monthly installments running over a period of six to eight years; subscriptions to be taken on a basis of one share to each member or dependent of the family; lease suitable land for three years, with the option of purchasing at the end of the three years or sooner; make the farm unit nothing less than a ten-horse farm, which would permit the employment of a first-class farm superintendent without creating a burdensome "overhead." Plant food and forage crops alone, and those in proportion to the needs of the company's stockholders in the way of cereal, meat, dairy, vegetable and poultry supplies and forage and pasture for its work animals and cattle.

The organization of such a food factory would create its own market. Distribution would be direct, and the middleman's profit would be eliminated. Food would be consumed in the territory in which it was produced, and the burden on the railroad transportation facilities would be lightened. The incorporation of farming interests would necessitate an adequate accounting system and stimulate cost accounting, the lack of which has generally been a weak spot in our farming operations.

Farm labor is becoming scarce. Grain and forage crops can be handled with a minimum of labor. Much of the work can be done with tractors and improved machinery. A much larger acreage per horse-power can be handled where grain and forage crops exclusively are grown. Rotation can be more efficiently practiced and the advantages of legume and cover crops more fully utilized.

It might be contended with a certain degree of force that any large measure of co-operative farming would

tend to further promote the influx to the cities and towns and set itself against the most healthy development of rural community life. To offset this it may be held with equal force that, if conducted on more progressive lines, co-operative farming would act as a stimulus to better methods on the individual farmers of surrounding territory, and set the pace for them and help to solve some of their problems, and thus become the basis of improved rural conditions; conditions which in time might even set the tide back to the country. An investment on the part of the urban dweller in a co-operative farming company might also be expected in the case of many to awaken the latent interest in the soil that is more or less inherent to all men.

At present, however, we confront a condition, not a theory. The call now is for food. Our enemies of the Old World countries are individually highly efficient in farming, as in other things. Organization has proven itself in our industrial life. May not many of those who have harkened to the siren hum of organization in our industries, in their need, apply its transforming touch to their and their country's food problem?

Co-operation Lessens Cost of City Garden.

[Missouri College of Agriculture.]

Co-operation has been suggested as a solution of many problems in farm production, and now J. T. Rosa, Jr., of the University of Missouri College of Agriculture suggests co-operation as a means of reducing production cost for the vacant-lot gardener. The average city gardener is not in position to plow and prepare a garden plot himself. Mr. Rosa suggests that a number of gardeners in a given neighborhood employ a man and team to prepare their gardens. In this way the expense can be divided among them and the man and team can be kept busy throughout the day. If the community garden movement is extensive enough, men and teams may be hired by the day or week, and each gardener's plot can be fitted in turn. In this way the work can be done more cheaply than where each gardener hires his plot prepared by the job. A great deal of trouble can also be eliminated. Other advantages, such as purchasing fertilizers, manure, seeds, plants and other garden supplies, can be had through co-operative effort.

Since the spring garden should be planned in the fall, Mr. Rosa suggests that organization be effected immediately. The advantages of fall plowing and fall manuring have been demonstrated. The work should be done while the weather permits.

Co-operation will also provide efficient means of marketing the surplus product. Mr. Rosa suggests that every town have an organization of this sort. If the project is not supported by some other civic organization, the municipal authorities, or some industrial concern, the community garden movement should be organized on an independent basis. If the movement is large enough a technically trained man or woman might be employed to supervise the work. This would be advisable only where the community garden plan was extensive and where the gardeners were well organized. While it may not be possible to organize the whole town, it is entirely possible for neighbors to obtain some of the benefits of the organization by co-operating in preparation of their garden plots. The necessity for home gardens will be greater than ever in 1918, and plans should be made immediately so that the garden work will be more efficient and give better results during the coming season.

Fifty Thousand School Children to Be Enlisted in War Garden Work.

[The Cincinnati.]

Fifty thousand circulars will be distributed to school children within the next few days by the War Garden Committee, telling these young farmers what should be

done with their gardens this fall in order to have the ground in the best of condition for their war gardens next spring.

So far the work of the War Garden Committee has been conducted without expense, the School Board, the Chamber of Commerce and the War Council having absorbed most of the expense. The public never has been asked to contribute to the work. Now that the scope has become so broad, it is the intention of the War Garden Committee to send out letters asking for aid.

The expense of preparing the circulars for the school children will come from the fund to be raised. The booklet will contain information, compiled by D. R. Van Atta, County Agricultural Agent, as to what should be done in the way of piling up leaves, spading the ground and spreading manure.

The Cincinnati War Garden Committee and D. R. Van Atta, County Agricultural Agent, within a few days will start a campaign to last far into next summer. Its object will be an increase of 500 per cent. in crops in Cincinnati war gardens.

The campaign will be carried on principally by distribution of literature containing appeals to families to start gardens and grow their own perishable vegetables for the coming spring and summer.

Boy Farmers in Mississippi Prove Good Bank Risks.

Jackson, Miss., December 10—[Special.]—As a part of Mississippi's drive for a 100 per cent. increase in hog production during 1918, efforts are under way to enroll a total of 20,000 boys in corn and pig clubs, and indications are that the campaign will be successful. There were 11,000 club youngsters in the drive of the present year for more foodstuffs, and the farm experts say they played a big part in the tremendous crops raised this season.

Trips to the State Fair at Jackson are given nearly all the prize-winning boys, and in 1918 boys in the fourteen counties in which branches of the Bank of Grenada are located will have an opportunity to try for a trip to the International Livestock Show at Chicago. Three will be sent there.

Arrangements for financing the work of the pig clubs have been made, and banks in practically every county will furnish the money for the purchase of a porker, taking the boy's note for it. Of the hundreds of such notes issued during the past three years not a single one has been reported as bad, and bankers consider the boys first-class risks.

There is every reason to believe that Mississippi will increase its pork production 100 per cent. in 1918, and will be able, at the same time, to give ample attention to development of the dairy industry, already in the million-dollar class, the beef-cattle industry and sheep raising.

South Carolina Bank Stimulates Interest in Hog Raising.

By a unique method of financing Duroc-Jersey hogs being furnished to farmers to be paid for out of the increase, the People's National Bank of Rock Hill is stimulating a great interest in hog raising in that section of South Carolina.

Otto H. Kahn's Great Speech in Pamphlet Form.

The Harrisburg Chamber of Commerce, Harrisburg, Pa., has printed in book form the stirring address of Otto H. Kahn of Kuhn, Loeb & Co., delivered before the Harrisburg Chamber of Commerce September 26 and largely reprinted in the MANUFACTURERS RECORD of September 27.

Wide attention has been attracted to this strong appeal to Americanism by a native German, long resident in America, and who speaks of the Prussianized Germany with tremendous power and withering scorn.

The Harrisburg Chamber of Commerce announces that it will be glad to send a copy of Mr. Kahn's address free of charge to anyone who writes the association.

Progress of Nation's Textile Industry Strikingly Shown at Greenville Exposition

[Special Correspondence Manufacturers Record.]

Greenville, S. C., December 11.

With the opening of the second Southern Textile Exposition on Monday morning of this week every foot of exhibit space was occupied by representative manufacturers of cotton-mill machinery equipment, supplies and accessories from every section of the country.

Altogether there are 185 exhibitors occupying 460 exhibit spaces, ranking from a single space to as many as twenty in the case of some of the large exhibits.

All of the important manufacturers of cotton-mill machinery are here and have on display in operation their latest types of equipment for every branch of the industry. In addition there are all the leading manufacturers of the wide range of supplies and accessories that enter into all departments of the modern textile mill, from the power loom to those turning out their goods ready for the market. These exhibits even include latest appliances for the offices and counting-rooms, while exhibits of the Y. M. C. A. and some of the Southern textile colleges show the work that is being done along welfare and educational lines to promote better living conditions and raise the morale of the working forces and educate the young men and women in the higher or more technical branches of textile manufacture.

It has been conservatively estimated that the machinery alone exhibited will represent a value of \$125,000, while at least 1000 principal executives and their assistants have come to be with their booths to welcome the visiting mill men and explain the features of the various exhibits. One very important fact, too, is that many of the exhibitors have brought their mechanical, electrical, chemical and other engineering experts so they could explain in a thorough technical manner the features of new improvements and fully answer any questions that might be asked.

A close study of the exhibits impresses the visitor with the wonderful advance that has been made in the manufacture of cotton goods, and this is all the more vividly emphasized by contrasting the old hand spinning-wheel, operated by an old negro woman in one of the booths, with the modern spinning frame of rows of spindles driven at a high rate of speed by electricity. But it was from the old, crude methods that our great textile machinery manufacturers have advanced step by step with a constant adding of new features as developed by the inventive minds of engineering experts until today one stands almost in amazement while looking with admiration upon these latest types of wonderful machines that seem in their automatic operation to be endowed with supernatural powers. These machines are all the more interesting to the visitor because he can actually see the product being made, and it is almost with a feeling of veneration that he pays tribute to the truly wonderful accomplishments of the American mechanical genius, who has not only developed many of these himself, but has also taken the best ideas of foreign machines and adapted them, with improvements, to American requirements.

The advance in machinery for the cotton has not been confined either to that for spinning, weaving and otherwise preparing the raw cotton for the finished product, but also extends to all of the auxiliary lines, for unless these had kept pace with the improvements of the strictly textile machine, that machine would not have been possible. For the power-room are shown new types of boilers, improved grate bars, feed-water heaters, scientifically prepared lubricants, modern steam engines and electric generators, and motors, valves, leather belting and steel-chain drive for transmission, ball bearings, and a great range of those modern specialties that, taken altogether, have contributed so much to lower cost and give greater efficiency in power development and transmission.

Many exhibits were also made of materials, equipment and special devices that enter into the construction and conveniences of the modern mill buildings, such as types of construction, roofing, skylights, steel window frames and sashes, concrete reinforcing bars, paints, sanitary drinking fountains, portable elevators,

electric industrial trucks, automatic weighing scales, cotton-mill-waste balers, floor sweepers, fiber roving cans and trucks, humidifiers, counters, tanks and towers, wire fences, while a number of textile mill engineers illustrated by photographs and plans their facilities for designing modern mill structures.

Electricity today plays an important part in the operation of the modern cotton mill, and the leading manufacturers in these lines had unusually complete displays of their devices, ranging from motors of all sizes to latest type of lamps for scientifically lighting the mill buildings for night operation.

Then there were lines of American-made dyes for every purpose; chemicals for sizing, bleaching and finishing cotton goods, powdered metals for the dye and textile industries, machinery and equipment for dye-houses and bleachers, and oxy-acetylene equipment for welding broken machinery.

For more efficient operation in the office were shown addressing machines, electrically operated; adding and calculating machines, time-recording clocks to keep the working hours of employees, and other modern devices that have proven of much value for accuracy and efficiency.

The attention which mill managers are paying to the health and welfare of their employees was shown in the displays of sanitary sewerage systems and sewage disposal, sanitary drinking fountains, landscape gardening, and especially in the Y. M. C. A. work that is a feature of practically every Southern mill village.

A number of the leading cotton mills and cotton goods commission houses also had exhibits of finished goods to illustrate the range and character of products made.

These special references tend to show the completeness of the exposition this year and how it has come to be the place where the mill owners come and bring their chief assistants so that they can see the progress that is being made in the equipment they need. Indeed, it has been the loyal backing of the mill owners themselves that has brought to these expositions the gratifying success they have deservedly attained.

Since the holding of the first exposition, in 1915, a new, expansive and modern type of exhibition building has been erected at a cost of \$140,000. This building, which was designed by J. E. Sirrine, the textile-mill engineer of Greenville, is of concrete and mill type of construction, and has a floor area of 40,000 square feet. It is modern in every detail of construction and equipment.

During the latter part of the week the Southern Textile Association will hold its meeting in Greenville. This association is composed of the superintendents of Southern cotton mills, and in view of the exposition attraction an unusually large attendance is expected.

A substantially complete list of the exhibitors follows:

ABERFOYLE MANUFACTURING CO., Manufacturers of Fine Textile Fabrics, Chester, Pa.: Reception booth for the convenience and use of patrons and friends.

ADDRESSOGRAPH CO., 125 Hurt Bldg., Atlanta, Ga.: Its cotton mill payroll machine, this system eliminating the necessity of writing names with pen or typewriter on payroll forms. A plate embossing machine for making additions and changes in names, and which is furnished with each equipment. A. S. Woodward, southeastern sales manager, Atlanta, Ga., in charge.

AGNEW & SHULL, Greenville, S. C.: As general Southern agents for the J. C. Hublinger Bros. Company, Keokuk, Iowa, exhibited a full line of starches used in textile trade, and sufficient line of samples of allied products to show various stages of manufacture of cornstarch. In attendance were John H. McNamara, general manager J. C. Hublinger Bros. Company, Keokuk, Iowa, and Agnew & Shull, Greenville, S. C.

ALEXANDER BROS., Philadelphia, Pa.: Samples of leather belting especially suited for textile mills. W. T. McLeod, manager Atlanta, Ga., office, in attendance.

AMERICAN ANILINE PRODUCTS, INC., 80 Fifth Ave., New York: Fabrics dyed with colors of company's manufacture. Exhibit in charge of N. H. Benefield, Southern representative, with offices at Danville, Va., and George L. Armour of New York office.

AMERICAN KRON SCALE CO., 430 East 53d Street, New York city: New portable cotton bale scale, claimed to so reduce cost of weighing that saving for first year will pay for scale. Vice-President E. Ohnell and J. Kirk Powell, Southern sales agent, Louisville, Ky., in charge.

AMERICAN MOISTENING CO., Boston, Mass.: Types of its humidifiers shown in operation.

AMERICAN WARP DRAWING MACHINE CO., Boston, Mass.: Style SS warp drawing machine in operation, and mechanically draws-in warps for weaving. Southern Manager A. W. Harris in charge.

ANCHOR POST IRON WORKS, New York City: A sample of its chain-link woven steel fence, seven feet in height, showing the construction of the posts and all fittings, as well as the distinctive form of Anchor post anchorage; also a panel of square mesh factory fence; a panel of plain iron railing, and sections of low ornamental railing, an electrically welded single gate with posts and photographic display of Anchor post installations of all kinds. In attendance were Geo. W. Forster and D. W. Haskell.

BALTIMORE BELTING CO., Baltimore, Md.: An attractive display of its products, with full rolls of leather belting on special stands for convenient examination. On a large wall panel were a complete line of mill strapping, pickers and accessories, including the raw material from which manufactured. Special attention was called to the announcement that a branch factory and warehouse would be established in Spartanburg, S. C., January 1, 1918, to take care of the company's rapidly growing business among the Southern mills. Exhibit in charge of R. Vance Whitener and James A. West, Jr.

BARBER-COLMAN CO., Rockford, Ill.: A model machine shown was portable type, used by manufacturers of towels, damask, heavy duck and tire fabric. A striped warp, tied in at a mill, showed practicability of using Barber warp tying machine on great variety of patterns. All sizes of Barber knotter also exhibited. Field Manager R. E. McCausland, Rockford, Ill., and J. H. Spencer and N. H. Alford of Greenville office in charge.

BIRD-WILCOX CO., Atlanta, Ga.: Exhibit of various styles welding outfit for cotton mills, two outfits using compressed gases, and two using acetylene generators. Expert welder demonstrated apparatus on actual cotton mill work. A complete line of accessories and supplies shown, including welding tables, asbestos gloves, rods, fluxes, etc. President George Bird, assisted by J. H. Lamb, the company's representative in Charlotte, in charge.

THE BLAUVELT-WILEY PAPER MFG. CO., 129-135 Charlton St., New York: A full line of cone wrappers, case lining and baling paper. Principal features were printed cone wrappers, showing three-color process of printing.

BRADFORD BELTING CO., Cincinnati, O.: Samples of company's leather belts adapted for use on looms, cone drives and spinning frames, all carried in stock at branch store in Greenville, S. C.

BRADLEY STENCIL MACHINE CO., 3745-3753 Forest Park Boulevard, St. Louis, Mo.: Several styles of stencil machines for cutting paper stencils for marking shipments. S. J. Webb in charge.

BURROUGHS ADDING MACHINE CO., Detroit, Mich.: Specially designed machines to meet the demand of the clothe room, pay roll and general office work in cotton mills. An expert operator from the Burroughs factory demonstrated time and labor-saving devices of machines. Floyd Hughes, agency manager, in charge.

CAROLINA SPECIALTY CO., Charlotte, N. C.: Paints, oils, disinfectants, belt dressing, featured Trus-Con Industrial enamel, which was used on entire ceiling of Exposition Building. Distributors in the Carolinas for The Trus-Con Laboratories, Detroit, Mich., and for Anti-Friction Belt Dressing Co., Baltimore, Md.

CAROLINA SUPPLY CO., Greenville, S. C.: A various line of special textile supplies used exclusively by cotton mills.

CARRIER ENGINEERING CORP., 29 Cortlandt St., New York: Exhibit included Carrier humidifier in operation; provides different temperatures and humidities in each department as required, and from one centrally located and automatically regulated humidifier. E. T. Lyle in charge.

CEMENT PRODUCTS CO., Wilmington, N. C., manufacturers of "Sansep" portable sewage-disposal systems. Full line of company's products. A. M. Whelpley, Southern sales manager, in charge.

CERTAIN-TEED PRODUCTS CORP., Atlanta, Ga.: A complete line of composition roofings and mill paints; also moving pictures, showing different processes in manufacture of composition roofings. Brent A. Lathimer, Richmond, Va., and G. M. Williams, Atlanta, in charge.

CHAPMAN MANUFACTURING CO., 185 Devonshire St., Boston, Mass.: Section of 10 spindles arranged on a mahogany stand and run with miniature motor and ammeter giving readings to demonstrate power saving accomplished by spindle. Type of spindle exhibited embodies latest improvements in design and perfection of manufacture, which has been attained by company by installation of entirely new and special automatic machinery.

CHARLOTTE LEATHER BELTING CO., THE, Charlotte, N. C.: Supplies of clean quality leather belting; in manufacture of belting company has grown from capacity of 50 hides per week to 2000 hides per week in 11 years.

CHARLOTTE MANUFACTURING CO., Charlotte, N. C.: Card-setting machine making cylinder fillet. During last three years company has tripled size of its shop and is now installing additional machinery.

CLING-SURFACE CO., Buffalo, N. Y.: Operating exhibit demonstrating preservative affect and efficiency of Cling-Surface preservative treatment for transmission belts and ropes; showing belt driven pumps with belts treated and untreated, and dials and gauges showing relative output and efficiency of treated and untreated belts.

CLIPPER BELT LACER CO., Grand Rapids, Mich.: Belt-lacing equipment shown in operation operating on various sizes of belting.

R. D. COLE MANUFACTURING CO., Newnan, Ga.: Model of Manning-type boiler and photographs of standpipes, towers, tanks and other products of company's manufacture.

COOPER & GRIFFIN, Greenville, S. C.: Loop on firm's private wire from New York to New Orleans installed, cotton news and market quotations furnished.

CROMPTON & KNOWLES LOOM WORKS, Worcester, Mass.: Automatic duck loom, latest construction, and automatic gingham loom, both motor driven, and in operation.

CROUSE-HINDS COMPANY, Syracuse, N. Y.: Several new developments in electrical conduit fittings, including types for every form of lamp or plug outlet, junction boxes, fuse boxes and inclosed switches; new model "Dead Front Panel," which leaves only the buttons of the switches protruding; flood-light projectors for protection against night assaults. Complete catalogues of products were distributed.

CURTIS MARBLE MACHINE CO., Worcester, Mass.: Collection of photographs, circulars and other literature, showing details of company's large line of cloth-room machinery extensively used throughout Southern mills.

CYCLONE FENCE CO., Waukegan, Ill.: Samples of Cyclone chain-link factory fencing of different designs that have been erected at leading cotton mills. Also samples of other Cyclone fencing costing less. Photographs were displayed of a number of Southern installations.

THE DETROIT GRAPHITE CO., Detroit, Mich.: Samples of "Sta-White," high gloss white interior paint used on many mills in South, and elsewhere; specially durable

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combinations of colors for inside and outside painting of cottages; and other specialties.

DOUGLAS CO., Cedar Rapids, Iowa: Different grades of textile starch, manufactured from corn, standard, modified and special; also apparatus for showing tests on special starches.

DRAPER CORPORATION, Hopedale, Mass.: Exhibited seven looms, one spooler, one warper, one balling machine for warper, and samples of smaller goods; slasher combs, spindles, rings, bobbins, shuttles, loom temples, etc. Looms, all motor driven, included 90-inch L model loom for broad sheeting, 40-inch M model loom for fine goods; 36-inch K model dobby loom; 40-inch E model loom for standard plain goods of that width; 30-inch E model loom with steel harness and straws patent feeler system; 36-inch E model loom on khaki weave; 36-inch F model loom on duck weave; spooler, short machine of latest L model; warper, with company's patent fluted cylinder, advantageous on warper measuring from cylinder. Smaller goods illustrated company's supplies and improved articles of manufacture. Also exhibited samples of detailed loom improvements, showing construction, separate from looms in operation.

ECONOMY BALER CO., Ann Arbor, Mich.: Number 60 directly connected electric motor driven baler, for baling of cotton mill waste, etc.; also special cotton waste hand-power No. 54 Economy baler. J. S. Hulme, South-eastern representative, and George W. Langford, president and general manager of the company, in attendance.

EUREKA MANUFACTURING CO., Lincolnton, N. C.: The latest developments of States sectional grate bars, known as the "Basket" type, designed by L. A. States, mechanical engineer, Gastonia, N. C., and made by Eureka company. Harry Page of company in charge.

FELT & TARRANT MANUFACTURING CO., Chicago, manufacturers of controlled-key Comptometer adding and calculating machine. Machine's application to book work, billing, estimating, prorating, cost calculations, payroll, etc., demonstrated. Exhibit in charge of A. D. Davies, Southern district manager, and Walter E. Sloan, Charlotte, assisted by corps of demonstrators.

D. FELTON BRUSH CO., Atlanta, Ga.: Three cases of brushes illustrating various lines it manufactures for textile trade; also loose samples of materials company used in construction of brushes. Multifarious exhibit illustrated the demands made on brush makers in textile industry. G. B. Snow and J. B. Fitch in attendance.

FIBRE-SPECIALTY MANUFACTURING CO., Kennett Square, Pa.: Warehouse cars, roving trucks, roving cans, doffing trucks and boxes, hosier boards, complete line of textile and hosier mill hollow-wares. Representatives from Greenville, Southern office, in charge.

WILLIAM FIRTH, 200 Devonshire St., Boston, Mass.: Firth broomless floor sweepers for cotton mills, dustless card-stripping apparatus, both portable and from central station, and general machinery cleaning apparatus operated from central station.

FOSTER MACHINE CO., Westfield, Mass.: Latest designed Foster winding machines, equipped for cone winding, knitting yarn and tube winding on warp yarns. The Foster doubling machine also shown, equipped for doubling or folding two, three or four ends. The product of the Foster doubler is used in ply-yarn mills for folding before twisting and also as the first folding in multiple winding for electric wire covering.

GENERAL ELECTRIC CO., Schenectady, N. Y.: Exhibit arranged as reception booth, with complete line of descriptive literature of equipment suited for textile mills, also samples of apparatus. General Electric representatives in attendance. Sidney B. Paine, manager of the mill-power department, Boston; J. B. Wiard, designing engineer, West Lynn Works; W. J. Dorworth, Baltimore office; E. P. Coles, Charlotte office; W. H. Wylie, Jr., Charlotte office; D. W. Peabody, district manager power and mining department, Atlanta office, and H. S. Roberts, mill-power department, Atlanta office.

THE GRATON & KNIGHT MANUFACTURING CO., Worcester, Mass.: An exhibit covering various beltings, strappings and leather specialties for textile industry.

THE HACKADAY COMPANY, 1823-1829 Carroll Avenue, Chicago, Ill.: Samples of company's "Interlo" wall finish applied on both plaster and wood without sizing or undercoat, and will not wash or peel off, as claimed. O. H. Johnston and J. T. Stone in attendance.

A. W. HARRIS OIL CO., Providence, R. I.: Samples of Harris oils and greases. W. M. Kendrick in charge.

HOME LIGHT & POWER CO., Charlotte, N. C.: A Delco-Light plant with general line of electrical accessories that can be operated in connection with Delco-Light, also electrically operated iceless drinking-water tank, capable of supplying the needed amount of iced water to operatives of a mill. Also a motion-picture machine operated by Delco-Light.

THE HOWE SCALE CO., Atlanta, Ga.: Automatic cotton scales and automatic lap scales. Company's representatives E. E. Tanner, in the Carolinas, and Z. B. Hamilton, in Georgia and Alabama, exhibited in charge.

HUBBARD MACHINE CO., INC., Worcester, Mass.: S. K. F. self-aligning ball bearings applied to cotton-mill machinery, particularly to beater, fan, and card boxes, and hangers. In beater and card-box design, self and positive lubricating features incorporated, preventing dripping of oil or grease on cotton, also doing away with shaft wear and babbitt wear. L. L. Nakashian, Southern agent, Charlotte, N. C. in charge.

HUDSON & KOHN COMPANY, Greenville, N. C.: Reception booth, company being cotton-goods distributors and converters and jobbers for variety of goods manufactured South.

HUNTER MANUFACTURING & COMMISSION CO., 58-60 Worth St., New York City: "Hunter's Country Store," with assortment of cotton fabrics. Souvenir and descriptive booklet distributed.

HUNTINGTON & GUERRY, Greenville, S. C.: Illustrated the features of Huntington & Guerry's "trouble-proof" electrical installations by means of actual examples of mill wiring, and by photographs of lighting and power installations showing recent successful advances.

INTERNATIONAL TIME RECORDING CO., Endicott, N. Y., through its Atlanta office, exhibited time-recording clocks for use in textile mills, especially featuring the dial clocks for cotton and hosier mills.

JACQUES WOLF & CO., Passaic, N. J.: Samples of "Monopole" oil, used for dyeing and finishing; "Glasgow" size, a new finishing preparation; bleaching oil, used as an addition to the kier boil, for cleaning and purifying cotton fibre; "Levuline," a brilliant product made especially for softening sulphur blacks, and "Cream Softener," for softening yarns and piece goods, especially after bleaching. Exhibit in charge of R. T. Grant, Southern agent. Dr. Alfred Pfister, secretary and chief chemist, and C. E. Hessling.

JENKINS BROS., 80 White St., New York: A reception booth showing samples of company's valves, including

standard and extra heavy brass globe, angle, check and gate valves, automatic equalizing stop and check valves, Y or blow-off valves, hose valves, sheet packing, pump valves and gaskets for steam-power plants in textile mills. B. R. Wofford in charge.

KAUSTINE SALES & SERVICE CO., Greenville, S. C.: Sample of Kaustine method of individual type of septic-tank sewage-disposal system for mill villages and private homes.

KEEVEY STARCH CO., Columbus, O.: Complete line of mill and laundry starches and by-products. James H. Maxwell and J. J. Her, Southern representatives, Greenville, S. C., in charge.

KEYSTONE FIBRE CO., Brooklyn, Del.: A comprehensive line of mill receptacles, including roving cans, doffing and roving trucks, and boxes; special constructions originated to meet requirements of Southern mills, especially "Peerless" seamless can, not affected by excessive humidity.

A. KLIPSTEIN & CO., 644-652 Greenwich St., New York: Samples of dyestuffs and chemicals; also, gums, oils and specialties for bleaching, sizing and finishing; colors and products bleached, finished and dyed with company's materials. Paul F. Haddock, Southern manager, Charlotte, N. C., assisted by W. R. Smith and C. A. Sweet, salesmen, in attendance.

LEATHEROID SALES CO., 1024 Flibert St., Philadelphia, Pa.: Newest types of seamless roving cans, doffing boxes, barrels and baskets. Leon B. Rogers and James L. Niekirk, in charge.

THE LINK-BELT CO., Philadelphia, Chicago, Indianapolis: Link-Belt silent chain drive in operation, together with numerous enlargements of photographs of installations in Southern textile mills. J. S. Cochran, Charlotte, N. C., representative; James S. Watson, sales manager; Howard Burkholder, engineer textile machinery department, and Julian S. Holl, advertising manager, in attendance.

H. F. LIVERMORE CO., Boston: Loom repair parts in general, with special stress upon pieces of recent and improved construction; also general line of weave-room specialties and supplies. Wm. P. Vaughan, Southern representative, in charge.

LOMBARD IRON WORKS & SUPPLY CO., Augusta, Ga.: Samples of textile supplies, castings, etc., especially featuring horizontal return tubular steam boilers, used in numerous textile mills of Piedmont section, also double-jacketed steam sizing kettles. James Brotherton in charge.

THE WALTER E. LUMMUS CO., 173 Milk St., Boston, Mass.: Lummus automatic dissolvers for making chemical solutions, and especially adapted for producing caustic solutions used in textile mills; Lummus-metrolift, automatic device for lifting and measuring liquids, and Lummus lifting tongs, for handling lump chemicals.

THE LUNKENHEIMER CO., Cincinnati, Ohio: A complete line of "Quality" engineering specialties, comprising assortment of valves from $\frac{1}{2}$ inch to 24 inches, in globe, angle and gate patterns, in various weights, suitable for all existing conditions, from low pressures up to 300 pounds per square inch and for superheat conditions up to 600 degrees. In charge were C. W. Thrash and W. M. Hood.

DAVID LUPTON'S SONS CO., Philadelphia, Pa.: Models of various types of Lupton steel sash suitable for side-wall openings; and of Pond continuous sash for monitor and sawtooth roof construction; also models of sash-operating devices, rolled steel skylight, and many photographs of installations. Luke Seawell, Charlotte, N. C., in charge.

MAIN BELTING CO., Philadelphia, Pa.: Loom operated with Leviathan-Anaconda belting, and another Leviathan-Anaconda belt working in a new-style shipper designed to eliminate belt edge wearing. Rupert E. Hall in charge.

MASON MACHINE WORKS, Taunton, Mass.: Under power, one spinning frame equipped with all latest devices; one wide sheeting loom 81 inches wide; one 40-inch Southern sheeting loom, and one 36-inch Chambray loom. All equipped by Hopedale Manufacturing Co., Milford, Mass., with latest type of filling-change mechanism, warp stop motion and feeler.

THE McNAUGHTON MANUFACTURING CO., Maryville, Tenn., exhibited a set of their new type "H" rocking grates. Besides the advantages of good grate construction and fuel economy, which have been a feature of their products, the manufacturers make the claim that this new grate will not burn out.

MERCURY MANUFACTURING CO., 4118 South Halsted St., Chicago, Ill.: Type "Z" of electric industrial trucks, widely used in industrial plants, warehouses and terminals for handling freight and goods.

METALS DISINTEGRATING CO., INC., 3 South William St., New York: Powdered metals, including zinc dust of exceptional purity and fineness, guaranteed 97-98 per cent, reducing power and 90-95 per cent, to pass a 350-mesh screen, for dye and textile industries; also aluminum, lead and tin dusts.

MONROE CALCULATING MACHINE CO., Orange, N. J., and Woolworth Building, New York city: Types of calculating machines which quickly add, subtract, multiply and divide. District Manager J. R. Ramsay, Atlanta, Ga., in charge.

MORSE CHAIN CO., Ithaca, N. Y.: A feature of exhibit, 100 H. P. Morse silent chain drive in operation, driven by $\frac{1}{2}$ H. P. Morse silent chain. An ingenious arrangement on the shaft permitted the entire movement of the Morse rocker joint in the big chain to be followed with the eye, thus explaining its construction. Geo. W. Pritchett, Southeastern representative, Greensboro, N. C., and John S. White, manager of the Boston office, in charge.

FRANK MOSSBERG CO., Attleboro, Mass.: Guaranteed unbreakable warp beam heads, designed to replace breakable cast-iron heads, and because of their lightness effect marked saving in freight in shipping.

NATIONAL SCALE CO., Chicopee Falls, Mass.: National counting machines; National-Chapman elevating trucks; National combination scale-truck; National calling system, and multi-unit sectional steel shelving. J. W. Grayson, sales manager, in charge.

NATIONAL STARCH CO., 17 Battery Place, New York city: As sales representatives of Corn Products Refining Co., exhibited full line of its starch products for industrial purposes, including Eagle finishing starch. Also recent developments in manufacture of gums and dextrines for textile industry. J. R. White and A. G. Smith of Southern office, Greenville, S. C., and Dr. W. R. Cathcart, technical director, in attendance.

THE NEW YORK & NEW JERSEY LUBRICANT CO., 165 Broadway, New York: Grades of "Non-fluid" oil developed especially for textile industry, to lubricate all machines employed in carding, spinning, twisting and weaving of cotton. In addition to members of regular sales staff, company had in attendance specialists on lubrication of textile machinery. A textbook on textile machinery lubrication was distributed.

N. Y. REVOLVING PORTABLE ELEVATOR CO., Jersey

City, N. J.: 800-pound and 1500-pound revolators, and half-size model of non-revolving portable elevator. Machines used for piling bales of cotton, cases of textiles, etc., saving time, labor and floor space, and make it possible to pile goods to ceiling with minimum amount of labor and less time than by hand. The 800-pound-capacity revolator especially adapted to textile mills, bales of cotton generally averaging about 500 pounds.

NORMALAIR COMPANY, Winston-Salem, N. C.: A standard Normalair humidifier in full operation. Exhibit an exact duplicate, as far as it goes, of all the company's installations. F. F. Bahnsen, engineer in charge.

NORRIS BROS., Greenville, S. C.: Shuttles, shuttle fittings of every description, more especially for plain looms and duck. J. M. Sitton and A. M. Norris in attendance.

THE OHIO BLOWER CO., 9204 Detroit Ave., Cleveland, Ohio: Exhibit of Swartwout rotary ball-bearing ventilators; semi-mechanical, and use the free power of the passing breeze to suck the impure air from a building and allow pure air to take its place. Features of ventilator are efficiency, low cost of installation, and no expense for operation. Built of copper or galvanized metal, in all sizes and to fit any style roof or outlet.

OXWELD ACETYLENE CO., 646-656 Frelinghuysen Ave., Newark, N. J.: A complete Oxweld welding and cutting portable outfit in operation. On display, but non-operative, a 50-pound carbide capacity Oxweld low-pressure acetylene generator, together with different types of apparatus. A special pamphlet, "Oxweld Service in the Textile Mills," was distributed. In attendance were L. E. Ogden, Eastern sales manager; J. D. Beckett, Southern sales representative; F. R. Chadwick, Virginia sales representative; P. J. King, Junior Southern sales representative, and C. A. Bradburn, sales service man.

PALMER FORCED DRAFT BURNER CO., Charlotte, N. C.: Plans and methods of company's coal and fuel burning system as installed in some Southern cotton mills. W. C. Alexander and H. O. Dorsey in attendance.

PAPCO PAPER PRODUCTS CO., Atlanta, Ga.: Papco slasher tape-moistening machine, and specially prepared slasher tape. F. B. Ludwig, president, in charge.

THE G. M. PARK CO., Fitchburg, Mass.: Typical construction showing Turbo humidifier in operation, also the Psychrostat, for automatically controlling humidity. For the first time was also shown the Niagara house humidifier, a self-contained air washer in a small-capacity unit, for houses, offices, cotton sampling rooms and other small spaces to be cheaply humidified.

PEECH SONS & PHILLIPS CO., Camden, N. J.: A display of mercerized cones. Fred L. Peech and Geo. C. Turner in charge.

PURSO SANITARY DRINKING FOUNTAIN CO., Haydenville, Mass.: Assortment of different styles of sanitary drinking fountains, also ice-cooling tank combination adjustable to any height; "Sherman Bubbler," especially for school purposes.

U. S. BOBBIN & SHUTTLE CO., Providence, R. I.: Complete exhibit of extensive variety of bobbins, spools and shuttle for textile mills. George F. Bahan, Southern representative.

SACO-LOWELL SHOPS, Boston, Mass.: Exhibited vertical opener with feeder, revolving flat card, 4-delivery drawing frame, roving frame $73\frac{1}{2}$, spinning frame, spooler, twister, and camless winder in operation, illustrating different processes in manufacture of yarn.

SAFEPACK PAPER MILLS, Drexel Building, Philadelphia, Pa.: Samples of "SafePack" waterproof paper—waterproof, rustproof, dirtproof, and smellproof—illustrating how machinery wrapped with "SafePack" reaches its destination in same condition as when shipped.

EARL F. SCOTT, M. E., Candler Building, Atlanta, Ga.: Samples and catalogs of products of following companies he represents: Ashton Valve Co., Boston, Mass.; Mason Regulator Co., Boston, Mass.; the Terry Steam Turbine Co., Hartford, Conn.; Lea-Courtenay Co., Newark, N. J.; the "S. C." Regulator Co., Postoria, Ohio; Hill Pump Valve Co., Chicago, Ill.; the Ohio Blower Co., Cleveland, Ohio; the Sims Company, Erie, Pa.

SCOTT & WILLIAMS, INC., 366 Broadway, New York, with offices in Charlotte, exhibited four of latest model automatic hosier machines, producing half hose on Model K-G machines without requiring ribbons or top bands, also ladies' fashioned hem hose on Model K machines; also showing well-known underwear machinery.

THE SEYDEL MANUFACTURING CO., Jersey City, N. J.: Exhibit of sizing and finishing compounds, both in unused state and as applied on various textiles.

SHULTZ BELTING CO., St. Louis, Mo.: Samples of Aqua, Sable and Alamo belting, all tanned and manufactured by processes developed by company's 40 years' experience. A. Gregory Jones, representative of the company, was in attendance, co-operating with the Greenville Iron Works, Greenville, S. C., the company's selling agents in this territory.

J. E. SIRRINE, Greenville, S. C.: Display of three of firm's latest and most modern type mills, illustrated with photographs and drawings showing principal distinctive features. On bulletin boards were shown an outline of office work covering various phases of the textile industry, also statements as to value of mill engineering service to owners of industrial plants.

S. K. F. BALL BEARING CO., Hartford, Conn.: Transmission equipment and radial and thrust ball bearings as applied to textile machinery, showing equipment in motion, arranged to bring out self-aligning feature of bearing. On two stands were illustrated the easy running features of ball bearings. One of these stands was mounted on S. K. F. ball bearings and a ton of weight suspended from it. The shaft could easily be turned by the weight of a watch. The other stand, exactly similar, was mounted on well-lubricated plain bearings, and though supporting but half a ton of weight, it was necessary for a man to exert his entire strength to start the shaft rotating. This exhibit brought out the point that the starting effort of ball bearings is no greater than the running effort. A pyramid of bearings showed the range in size in which S. K. F. ball bearings may be obtained. The exhibit was in charge of H. N. Trumbull, manager of the transmission department, and F. V. L. Smith, Southern representative, also in attendance.

L. SONNEBORN SONS, INC., 22 Pearl Street, New York: Finishing, softening, brightening and sizing products for the manufacturing process; lapidolith, a concrete hardener; cement, for walls; stormtight for roofs and technical paints for maintenance of buildings, and all kinds of lubricating oils and greases for maintenance of machinery, these products all being extensively used by prominent Southern and Northern cotton mills.

SOUTHERN ENGINEERING CO., Charlotte, N. C., and Greenville, S. C.: Descriptive matter and photographs covering its work as designing engineers and jobbers

for all classes of reinforced concrete work, using the Havemeyer bar exclusively; also as representatives in North and South Carolina for the Fenestra steel windows, and steel tanks and towers manufactured by the Chicago Bridge & Iron Works.

THE STAFFORD COMPANY, Readville, Mass.: Four looms in operation under mill conditions as follows: 30-inch duck loom, 32-inch denim loom, 40-inch plain sheeting loom and 36-inch towel loom, equipped with two-cylinder dobby, all driven by direct-connected motors of General Electric Co. make. Exhibit in charge of company's Southern representatives, D. C. Dunn and D. L. Mackay. Sales manager W. Wood Smith also in attendance.

STANDARD FIBER CO., Somerville, Mass.: Complete line of vulcanized fiber receptacles, including plain and steel-clad fiber cars mounted on self-oiling wheels, plain fiber body and steel-clad fiber boxes in variety of sizes, round taper baskets, doffing boxes with movable platform, and as a specialty, "No-Waste" seamless hard fiber roving can, body of which is constructed without seams, joints and rivets.

STEIN, HIRSH & CO., New York and Chicago: Featured its Royal tapioca flour, which is used by cotton manufacturers, bakers, blenders, etc. Also a full line of starches, dextrose, printing gums, etc., and products especially prepared for sizing and finishing. W. A. Boyd and L. W. Peabody in charge.

STUART W. CRAMER, Charlotte, N. C.: Standard high-duty air-conditioning equipment, humidifiers and accessory parts, and automatic regulators for temperature and humidity. Equipment all shown in operating condition. Also exhibited improved diaphragm-actuated valves in which metal sheets are substituted for rubber.

SULLIVAN HARDWARE CO., Anderson, S. C.: General line of textile-mill supplies. This company is sole agent for Alexander Bros. leather belting for the State of South Carolina. In charge were S. B. Sullivan, secretary, and H. O. Wallace, manager mill-supply department.

SWAN & FINCH CO., 165 Broadway, New York: Moving exhibits of machinery, showing the workings of company's oil and grease products; also samples of various oil and grease specialties were displayed. Engineering literature and folders descriptive of our specialties were distributed.

C. J. TAGLIABUE MANUFACTURING CO., Brooklyn, N. Y.: Self-operating controllers for temperature, pressure, etc.; also indicating and recording thermometers, etc. L. C. Irwin in charge, assisted by E. J. Pooling and V. Wichum, experienced temperature engineers conversant with textile problems.

TERRELL MACHINE CO., Charlotte, N. C.: Two machines for cleaning filling bobbins for automatic looms and guaranteed to clean not less than \$5 per minute per bobbin stripping head. O. L. Richardson in charge.

THE TEXAS COMPANY, Atlanta, Ga.: Was especially interesting from the fact that the entire exhibit, including all decorative features, was built from stock and equipment from its warehouse. This company featured Texaco overlap specification roof and its Rabtex spindle oil. F. K. Dorrance in charge.

TEXTILE SPECIALTY CO., Greenwood, S. C.: The Roberts roving clamp and spinning frame cleaner in operation. This improvement, it is claimed, practically eliminates all waste in the spinning-room, saves about 30 to 50 per cent. in labor, according to the kind of spinning, and in addition improves the yarn.

THOMAS & THOMAS, 1521 Healey Building, Atlanta, Ga.: Pamphlets, rates, policy terms, employees' certificates and other data relating to group life insurance. F. Elliott Thomas and W. B. Thomas in charge.

THE TRUS-CON LABORATORIES, Detroit, Mich.: Full line of Trus-Con technical coatings and floor hardeners, together with information of interest to maintenance superintendents, textile industry. The entire ceiling of the Exposition Building has been coated with Trus-Con Laboratories' white enamel. The company was represented by H. MacRobert, Jr., district director, Atlanta, Ga. E. D. Rice, traveling representative in North and South Carolina, and E. G. Frank, publicity director.

U. S. RING TRAVELER CO., Providence, R. I.: Reception booth with display of spinning and twisting travelers. M. Ousley, Jr. Southern representative, Greenville, S. C., in charge.

THE UNITED STATES GRAPHITE CO., Saginaw, Mich.: General line of products, including dry lubricating graphite, graphite greases of all kinds and Mexican boiler graphite, laying special emphasis on the latter product.

U. S. GUTTA PERCHA PAINT CO., Providence, R. I.: A large hand-painted picture, representing the lifting of a roof from a factory, showing interior painted with "Barreled Sunlight"; also a churn equipped barrel of the kind used in shipping company's paint, this too being painted with "Barreled Sunlight." Also pictures of mills which have been painted with same paint. John S. Palmer, Greenville, S. C., and A. S. West, Providence, R. I., were in attendance.

THE VEEDER MANUFACTURING CO., Hartford, Conn.: Counters for thread-winding and textile machinery, loom picker counter being especially featured.

WARE SHOALS MANUFACTURING CO., Ware Shoals, S. C.: Samples of sheeting, shirting, drills and Osanburgs; bags made from cloth of company's manufacture, and a collection of pictures showing views of Ware Shoals, and also activities of company's welfare department.

WARREN WEBSTER & CO., Camden, N. J.: Webster appliances for use in a Webster vacuum system of steam heating and for Webster slasher equipments in textile mills; also Webster feed water heaters, steam and oil separators and steam specialties. A feature was an automatic stereopticon showing views of prominent Webster installations in the textile field throughout South. John B. Dobson, Southeastern district manager, in charge.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO., East Pittsburgh, Pa.: Several electric motors, especially designed for driving textile machines of various kinds, also control devices. A particularly interesting feature was voltage regulator in operation. An elaborately illustrated publication, describing Westinghouse equipment for textile mills, was distributed. The Westinghouse Lamp Co. also showed the use of Mazda lamps in textile work.

WHITIN MACHINE WORKS, Whitinsville, Mass.: One new pattern drawing frame of five deliveries; one roving frame, 144 spindles, 7x3½x55 inches; one eight-head high-speed comber with Whitin waste condenser; one tape drive spinning frame, 36 spindles, 3½-inch gauge, and one Whitin-Owen feeler motion for looms. **WHITINSVILLE SPINNING RING CO.**, Whitinsville, Mass.: Samples and descriptive literature covering company's complete line of spinning and twisting rings and specialties. Edward B. Smith in charge.

W. H. STONE.

Great Livestock Movement Fostered by Georgia Landowners

[Special Correspondence Manufacturers Record.]

Waycross, Ga., December 5.

An epoch-making livestock rally and barbecue was held at Pine Harbor, in McIntosh county, Georgia, on December 1. People from throughout the State were present, including the highest officials of the State Department of Agriculture, the State College and the United States Department of Agriculture. The purpose of the meeting was to celebrate the release of 14 additional counties from cattle-tick quarantine, making a total of 70 counties in the State now free from ticks and free to go to the farms of the West and Middle West to buy improved breeding stock.

The meeting was held under the auspices of the Georgia Landowners' Association, an organization composed of 1000 of the largest landowners and farmers of South Georgia, in that great coastal plain section made up of cut-over yellow pine lands and growing an abundance of native grasses suitable for the grazing of cattle and sheep.

This area until recently has been devoted chiefly to the turpentine and lumber business. The departure of the sawmill and the turpentine still are being followed by the introduction of better breeds of cattle and sheep, and also by the development of a large and growing hog industry. The progressive landowners have organized for the purpose of converting this vast empire of some 15,000,000 acres of lands, rich with native grasses, into great ranches and farms, in order that they may help the nation in this hour of crisis to meet its demands for meat. In short, it is their purpose to put these cut-over lands at work raising cattle, sheep and hogs, and to that end they are organized to drive the cattle tick from the State within another year, so that their markets may be free from within as well as from without to the best blood and to the best markets of the world.

An interesting feature of the charter of the Georgia Landowners' Association is a provision that it shall not be used for the pecuniary profit of any members, and it is, therefore, not engaged in selling lands.

It is on account of this non-profit feature of the Georgia Landowners' Association that the meeting at Pine Harbor was attended by numerous editors and by some distinguished livestock men, as their guests, from Northern and Western States. The leading feature of the program at Pine Harbor was an address by J. A. Delfelder of Riverton, Wyoming, one of the largest and best known sheep and cattle men of the West. Mr. Delfelder had spent a number of days as the guest of the association, inspecting the grazing lands and the cattle, sheep and hogs, and the various crops raised for their consumption. Mr. Delfelder brought with him a most interesting motion-picture film showing a wolf and coyote drive in Wyoming, and gave the stock men of Georgia an insight into the vigorous and organized manner in which the South might expect them to do things when they come to utilize these vast idle acres for the overflow of sheep and cattle from the great Northwest that is being cut up into homesteads and causing these large cattle and sheep kings to seek larger pastures elsewhere.

Seeing the opportunity of the Western stock man who has old ewes not able to stand the rigorous climate of the Northwest, but strong enough for several years' more service in this warmer climate, and also for the Western stock man and farmer who has improved breeding stock for which he is seeking a market, Mr. Delfelder, after the Pine Harbor meeting, telegraphed a number of Western stock men to visit this section with the view of leasing or buying cheap lands here in order that they may not be forced to sell their surplus stock. Mr. Delfelder believes that by co-operation between the Western range man and the landowner in this great coastal plain country a large number of breeding animals can be saved from the slaughter pen for a number of years of productive service in increasing the number of meat-producing animals.

Thus the big livestock rally at Pine Harbor has not only pledged anew the forces of Georgia, including bankers, stock men, landowners, railroads and business men, to make short work of the cattle tick as an essential step to bringing an increased livestock industry in the remaining tick-infested counties, but through Mr. Del-

felder has set in motion a movement that promises much in the way of a market for the farmers and stock men of the West, and results for the nation in an increased meat production which will mark the Pine Harbor meeting as one of the really great livestock meetings of the South.

Many Millions for War Work in Anne Arundel County, Maryland.

In Anne Arundel county, Maryland, millions of dollars are being spent or will be spent by the Government in its war work. Besides the erection of the large army cantonment providing for 40,000 men at Camp Meade, the Government is spending a vast sum at Annapolis in making additions and improvements to the buildings at the Naval Academy; it is erecting a mammoth wireless station in Greenbury Point, just across the Severn River from Annapolis; a quartermaster's supply station, to cost ultimately \$5,000,000, is being erected at Curtis Bay; improvements involving the expenditure of a large sum are to be made to the State rifle range at Saunders, and improvements are being made to the U. S. Const Guard Service Station at Arundel Cove, which has been taken over by the Navy Department.

At the Naval Academy work is being rushed on additions and improvements to the buildings. The addition to Bancroft Hall alone will cost more than \$1,000,000, and about \$300,000 is being expended in enlarging the heating and ventilating plant. A large amount of land has been reclaimed to provide space for buildings, and concrete piles are being used as foundations.

Considerable progress is being made on the new wireless station, which will be one of a series to be located at various points in the country. Work on the foundations for the buildings and the piers of the large towers to be used in connection with the station is proceeding rapidly.

The work on the quartermaster's supply station at Curtis Bay is being rushed. Within several weeks the extension of the Baltimore & Ohio Railroad from Curtis Bay to the tract will be completed, and the delay now caused by lack of materials will be eliminated. Much of the materials is now being brought by water. The Government has taken over 500 acres of land for the station. The land extends from the creek to within half a mile of the Annapolis Boulevard. Barracks for the men and guards have been completed, as have the temporary storehouses and outbuildings, and work on the buildings will now commence.

The Government plans to take over the State range at Saunders and will install 100 new and modern targets and erect barracks and other necessary buildings to enable at least 750 men to be trained at one time. There will be considerable grading and road building in connection with the work.

The Coast Guard Service Station at Arundel Cove has been taken over by the navy to handle work for it. Formerly it has repaired and built boats for the coast service. Now much repair and building work for the navy will be undertaken. Extensive improvements have been added and will be added from time to time.

The War Department will shortly take action in reference to the improvement of the bridge spanning Curtis Creek. The County Commissioners have been notified that the bridge is an obstruction to navigation in that the draw does not provide for sufficient clearance. It is probable that a new bridge of steel and concrete will be erected.

An Indispensable Adjunct.

R. S. HUNTINGTON, Huntington & Guerry, Electrical Engineering, Greenville, S. C.

Please extend our subscription to the MANUFACTURERS RECORD one year from date of its expiration, for which check is enclosed. We consider your paper an indispensable adjunct of our work, and hope it is as widely read throughout the nation as its treatment of topics deserves.

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The Wheat Problem of the United States

By ERWIN F. SMITH of United States Department of Agriculture.

Twenty years ago, as retiring president of the British Association for the Advancement of Science, the eminent English Physicist, Sir William Crookes, read a memorable paper on "The World's Wheat Supply," in which he maintained an approaching world-shortage of wheat, and for Great Britain in case of war, or of two successive crop failures, the prospect of famine. You will recall the sensation produced by this paper and the world-wide and more or less acrimonious discussion which followed. Twenty years is a short period in the history of a nation, but long enough for the dust of a discussion to settle and long enough for many things to happen confirmatory or contradictory of the statements of men. In this case also it has been long enough for the appearance of a world cataclysm like those we had supposed characteristic only of the Dark Ages. In a word, Attila and his legions have returned to curse the world, with famine in their wake. It is of interest, therefore, today to inquire to what extent time has refuted or substantiated Crookes' predictions. Crookes estimated the then yearly consumption of wheat in Great Britain at six bushels per individual. Our own present consumption is somewhat lower. With a population of 100,000,000, we consume in one form or another annually 500,000,000 bushels of wheat, withhold 50,000,000 bushels for seed and export the remainder. We produce about one-fifth of the wheat crop of the world and consume about four-fifths of what we grow. The United States is also a great maize-producing land. In fact, we grow on an average about four times as much maize as wheat, and by far more than any other nation, but of this also we export very little, except in the form of beef and pork.

According to Crookes, Great Britain in 1898 had a population of 40,000,000, requiring annually 240,000,000 bushels of wheat, and grew but 25 per cent. of this amount. For the last 10 years Great Britain has produced rather more than 60,000,000 bushels of wheat annually and has imported over 215,000,000 bushels. Crookes considered the wheat supply of the whole world, but his statements concerning the capacity of the United States for an annually increasing wheat production are the ones most immediately interesting to us. For the 30 years preceding his address he states that we had exported 145,000,000 bushels of wheat annually, but he regarded our wheat production as then at a maximum, and with a constantly-increasing population he believed we would soon cease to export, and actually become an importer. To cite verbally: "Practically there remains no uncultivated prairie land in the United States suitable for wheat growing. The virgin land has been rapidly absorbed, until at present there is no land left for wheat without reducing the area for maize, hay and other necessary crops.

"It is almost certain," he continues, "that within a generation the ever-increasing population of the United States will consume all the wheat grown within its borders, and will be driven to import, and, like ourselves, will scramble for the lion's share of the great crop of the world. This being the outlook, exports of wheat from the United States are only of present interest, and will gradually diminish to a vanishing point."

What are the facts? And what is the prospect? Our wheat exports for the last 18 years (1899-1916) have averaged 150,000,000 bushels per year, but have fluctuated a good deal. For example, the exports of the five years, 1904, 1905, 1909, 1910 and 1911, fell to 44, 71, 92, 61 and 83 million bushels, respectively, while the exports of the very productive year, 1915, reached the grand total of 276,000,000 bushels.

In other words, 20 years after Crookes' address, with a population that has increased 25,000,000, we still export wheat in large quantities and even more than formerly, but to be fair we must concede him another 13 years, since he said the shortage would come "within a generation." Even with this concession his prediction is likely to fail. In his general forecast as regards Great Britain, Crookes appears to have been nearer right than his critics, but he could not, of course, have

been expected to foresee in the United States the opening up of semi-arid lands to the culture of Russian wheats in half a dozen great States lying on either side of the 100th meridian. This has postponed our evil day for a generation or two, but that appears to be all. It cannot be doubted, I think, that we are now slowly approaching a time when our wheat supply must depend on something more than the opening up of virgin soils, if we are to produce enough to feed us. Certainly with our rapidly-increasing population it seems unlikely that we can continue to export wheat much beyond the middle of the century or can suitably feed our own millions without seriously concerning ourselves with improved methods of wheat culture and conservation.

The Wasters.

The wheat plant has many enemies. Not only man, but also a great variety of other organisms have learned that it is good to eat. Plant parasites are numerous and on the increase. Several are distributed at planting time on the seed. Rusts, smuts, molds, mildews, scabs, bacteria and a half-dozen other plant parasites take, each one, their annual toll, and the aggregate is enormous. Chinch bugs, aphides, Hessian fly, grasshoppers, weevils, wire worms and other insects destroy as much more, perhaps more than as much more. Then there are the grain-eating birds and the field rodents, not a small item, while houses and barns, hog sheds and cattle ranches, mill and granaries, often swarm with rats and mice, enormously prolific and more destructive than an army, except perhaps a Germany army! Man gets what is left, and the mass of mankind never give a moment's thought to the fact that often they get less than half a crop, and even under the most favorable conditions never a full crop, or to the further fact that **civilized man lives so nearly from hand to mouth and now depends so much on international comity for the rapid transfer of food as needed from land to land, that by a general failure of foodstuffs for but a single season, or by a local failure coupled with the systematic destruction of merchant shipping, as in this present war, whole nations may be reduced suddenly to the verge of starvation.**

The waste due to rats and mice alone would feed an army. Moreover, if we could dispose of these rodents, which are dangerous* as well as destructive, and it is quite possible to do so by rebuilding our storehouses and by the systematic use of traps and of poison, we could then eliminate most of our millions of cats and dogs, and thereby save enough to feed another army, to mitigate the poverty in our midst, or to feed all those European peoples whom pan-German greed has reduced to the verge of starvation.

Just now in our midst, calling for immediate attention, is another group of grain-wasters. I refer to the people who set fire to wheat fields, flour mills and grain storehouses with the view of aiding the enemy. In the name of humanity we should make short work of these individuals.

Just now we face an urgent need for the conservation of all kinds of food supplies, and especially wheat.

What Can Be Done?

This question resolves itself into two main considerations: First, plans looking toward the supply of our immediate needs. Second, plans looking to the future increase of wheat production in the United States.

As regards the present, we know that we must help to feed England, Belgium, France and Italy. This means a much larger export of wheat than formerly, and to bring this about we must curtail our own consumption of white bread during the present wheat year, because the wheat crop of 1917, in spite of the enormous amount of spring wheat sown, is only an average crop (659,000,000 bushels), and there are 150,000,000 extra mouths to feed. In other words, to do our duty by our

allies, and certainly we shall not be found wanting therein, we must substitute maize, and especially potatoes, fruits and other perishable vegetable products, for a portion of our customary white bread. We have this year a very large crop of maize (3,191,000,000 bushels) and more than 400,000,000 bushels in excess of an average crop, to which may be added all that great quantity formerly destroyed by the manufacture of whiskey. Fortunately, also, we have an excess of Irish potatoes approximating 80,000,000 bushels. If we eat more corn we cannot feed as much, therefore we must also eat less meat, which for the well-fed portion of the community will be no real hardship, but, on the other hand, should result in a distinct physical gain, since most of us eat too much meat. In 1917, to help bring about this necessary conservation of grain, we cultivated much waste land in and around cities and villages in vegetable gardens, and we must do the same in 1918. Every fertile spot should be made to produce food.

As regards next year, the United States Department of agriculture, the State experiment stations, the Council of National Defense, the National Department of Food Conservation, the press, and Congress, the latter especially by establishing a very high minimum price (\$2.20 per bushel, or more than double our average wheat price for a long series of years), have done all that it is possible to do to stimulate wheat production in the United States in 1918. Probably not less than 65,000,000* acres have been and will be planted in this country (winter and spring wheat together), and if the weather conditions are favorable the yield should be at least a billion bushels. But all this lies on the knees of the gods. In other words, much depends on uncertain weather conditions. Much also depends on our ability to harvest the great crop. In our Middle West, which is the wheat granary of the country, there were great losses in 1916-1917 from winter-killing. These may recur next year. Drought and rain at harvest time and the activities of the various parasites may also greatly reduce the yield.

Owing to war conditions, there was a decided shortage of agricultural labor in the United States in 1917, and this is certain to persist and even to increase in 1918. Every State and national organization, therefore, that is competent to deal with this situation should bring all its energies to bear upon it at once. It is a vital matter, and if additional State or National legislation is required to meet it, such legislation should be forthcoming at once. Personally, I do not see how the problem of harvesting so great a crop is to be solved unless people from our villages and cities volunteer in great numbers or are sent out to work in the harvest fields. They should, I think, be organized and sent. The high school and grammar school boys of the country could be of enormous assistance in securing the harvest if properly organized; also those drafted men not found acceptable for the army should be used. To some extent women must also work in the fields, I believe. In some way the crop must be harvested, but wishing it done will not do it. Congress, I think, must act.

Looking toward the future, it seems likely that following this war there will be a world-shortage of wheat for many years. European fields, agricultural implements, stock, farm buildings and farm laborers have been destroyed in such enormous numbers and over such a large area that to bring agriculture, wheat culture included, back to its old thrist, especially in Belgium, France, Germany, Austria, Roumania, the Balkans and Western Russia, will be the task of years. Moreover, the use of high explosives having enormously increased in this war, we must not lose sight of the fact that the fixed nitrogen so essential to the growth of the wheat plant will be harder than ever to obtain, since every shot from a gun converts just so much of this expensive agricultural substance into inert and poisonous gases. Truly man is the worst destroyer, and kings and commercial men who begin wars are the greatest criminals on the face of the earth. In view of this prospective world-shortage of wheat for at least a decade and probably for a much longer period, and also because our own population will probably increase from 100,000,000 to 140,000,000 by the beginning of the second half of the century, we must plan to grow in the United States nearly or quite double our present annual wheat crop, or, in other words, more than 1,200,000,000 bushels annually. We are trying to do this in 1918 by sowing a larger acreage, but this is a temporary expedient. It is not the wisest way to proceed

*Address before the National Academy of Sciences, at Philadelphia, November 20, 1917, revised for MANUFACTURERS RECORD.

*Rats are carriers of several infectious diseases dangerous to man.

nor wise at all, except as the emergency of a great war has now forced us into it. We should rather plan to reduce our acreage, obtaining more pasture land thereby, and increase our wheat crop by other means.

One of these means is an increased use of fertilizers. In the past we have drawn our potash salts from German mines, and our sodium nitrate from Chile. The potash source is no longer available and the nitrate has doubled in price since the war began, owing partly to its increased use in the manufacture of munitions, but partly also to increased ocean freight rates. (Nitrate of soda sold in 1913 in the Eastern United States for \$50 per ton; now it brings \$100 per ton.) Eventually the Chilean supply will be exhausted, and if the war should take a turn favorable to German interests it is conceivable that an alliance might be entered into between Germany and Chile which would altogether cut off our supply of this very necessary fertilizer. We should aim, therefore, to be self-sustaining in the matter of wheat fertilizers. What is the possibility of our becoming so? We have considerable supplies of phosphates now being worked in Florida and the Carolinas, perhaps enough for our immediate needs, and we have inexhaustible supplies of lime and sulphur.

Kelp is being tested out on the Pacific coast as a source of potash, and there are certain lakes and lake beds in the Far West from which it is said that potash can be obtained. Along the Atlantic seaboard there are two inferior sources from which an unlimited supply of potash is said to be available; (1) the hard feldspathic rocks of the Alleghanies, which contain 10 per cent. of potash, but which must be ground at a very considerable expense before the potash can be extracted, and (2) the immense green sand deposits which extend from New Jersey to Florida. Here is a vast source, and, in all probability, one from which American ingenuity will be able to extract the 8 per cent. of potash which it contains by methods cheap enough to render it commercially available for wheat culture.

So far as I know, we have no nitrate beds, but there is an inexhaustible supply of free nitrogen in the air we breathe and electric furnace methods are already in use in Germany for converting it into fixed nitrogen for the manufacture of explosives. This was suggested by Crookes in 1898 as a source of fixed nitrogen for wheat, but it has required two decades and a world war to force the English-speaking peoples to consider it seriously. By the use of Government-controlled water-powers for the generation of electricity and by manufacturing it under Government auspices on a large scale it should be possible within a few years to furnish the wheat growers of the United States with all the fixed nitrogen they need at a reasonable price. Congress has appropriated money and experiments are already under way, with good prospects of success.

At present in large areas of our wheat belt the natural fertility of the soil is depended upon to make a crop, and fertilizers are either not used at all or only in sparing amounts, but all this must be changed if we are to considerably increase our yields.

Can the Present Yield Per Acre Be Increased?

I have pointed out the great losses due to wheat parasites. By a thorough organization on a national scale under wise and energetic leaders, such an organization as we have not begun to approximate as yet, hardly even considered, eventually these losses can be cut in half, and possibly even a greater reduction can be made. The elimination of rusts alone would increase our wheat yield by at least 100,000,000 bushels annually; probably 200,000,000 bushels would be nearer the truth. Several of the fungous parasites are sown along with the grain and can, I believe, be controlled by the use of sound seed-grain; others, by the distribution of resistant varieties, and still others, in other ways.

By irrigation of dry lands, by the drainage of damp lands, by rotation of crops, by selection of productive varieties, by good culture and by the judicious use of phosphates, potash salts and nitrates we ought to be able to add another 200,000,000 or 300,000,000 bushels to our annual crop. In a great continental climate like our own, subject to many extremes of heat and cold, of rainfall and drought, it is a hopeless task, I think, to equal the high average annual yield of the best wheat countries of Europe—those possessing a more equable climate than our own, but the yield of individual fields in many parts of our wheat belt is so much in excess of our average yield, even to double and treble, as to afford good hope that by better systems of agriculture we

can accomplish over considerable areas that which has been done over and over again on individual farms in many States.

No one knows what is the maximum yield of wheat per acre that can be obtained under the very best conditions of soil, climate and tilth, using the most productive varieties. Often, however, yields of 40, 50 and 60 bushels per acre have been reported from many parts of various countries, including our own.

We are here, however, more interested in the rule than in the exception. Let us look for a moment at the yield of wheat in the countries which have given most attention to scientific wheat culture, and then compare these with our own yields. We may then, perhaps, be in better condition to judge whether we are now doing all that can be done and ought to be done to increase the yield per acre of wheat in the United States.

First as to Western Europe. It cannot be doubted, I think, that in Great Britain, France, Belgium, Holland, Denmark and Germany the scientific attention devoted to wheat culture, particularly in the selection of suitable soils and in the abundant and wise use of fertilizers has for many years far exceeded that given to it in other parts of the world, including the United States. Considerable allowance must be made for a more equable climate in parts of Western Europe, as is also the case in New Zealand, which has a very high wheat yield (average 33 bushels per acre for the three-year period, 1912-1914), but I am not here insisting on minor differences or desiring to draw fine distinctions, but only attempting to outline certain broad distinctions, a part of which appear to be due to better agriculture on the part of the countries named. The average yield of individual years in any country is to be distrusted, but the average of a long series of years affords a very good basis for comparisons. For example, the yield of wheat in Holland and Denmark for a series of years has been 38-40 bushels per acre. The yield of wheat in Belgium for the three-year period of 1912-1914 is only a little lower, namely, 37 bushels per acre. But these are small countries, it will be said. They are, but they are also countries in which there has been an intense practice of agriculture for many years. The same is true of Germany, a much larger country, and in Germany the annual yield of wheat for the 10 years preceding the war (1904-1913) averaged 30.7 bushels per acre, the lowest yield in any of these 10 years being 28.5 bushels. In Great Britain, for the 10-year period 1906-1915, the yield of wheat averaged 33.3 bushels per acre, the lowest yield being 31.4 bushels per acre in 1910. The yield of wheat in France for the 10 years preceding the war (1904-1913) averaged 20.1 bushels per acre. During nearly the same period (1906-1915) the yield of wheat in the United States averaged only 15 bushels per acre, and this is the best 10-year average we have ever had, the general average being raised by the exceptionally great yield obtained in 1915 (17 bushels per acre). This is a pitiful showing, and leaves our agriculture only a little ahead of the peasant agriculture of Russia, where the average yield of wheat is about 10 bushels per acre.

Not once in the 25 years, from 1866-1890, inclusive, did the wheat yield of the United States reach 15 bushels per acre, and ten times during that period it fell below 12 bushels per acre, the average for the 25 years being 12.1 bushels per acre. In the 25 years, from 1891 to 1915, inclusive, the yield of wheat in the United States exceeded 15 bushels per acre in nine different years, and once was just 15 bushels, the lowest yield being 11.4 bushels (in 1893) and the highest yield 17 bushels (in 1915), the average for the whole period being 14.1 bushels per acre. Here is an increase of two bushels per acre in the last 25 years as compared with the preceding 25 years. Whether this actually indicates improved agriculture or whether it is to be attributed principally to the opening up of fertile new wheat lands in our great Northwest is a matter which it would not be difficult to determine from further consideration of the yearly statistics of wheat growing in the great wheat States of Minnesota, North and South Dakota, Nebraska, Kansas and Oklahoma. The second period coincides with the development of numerous State experiment stations and with greatly increased activities on the part of the United States Department of Agriculture, but I am inclined to attribute the increase chiefly to the opening up of the new wheat lands in our great West and Northwest.

Since the time of our Civil War we have trebled the wheat acreage of the United States, which was 15,424,000 acres in 1866. From 1880 to 1892, inclusive, the

acreage held very steadily at 37,000,000 to 39,000,000 acres, only once falling to 34,000,000 acres (1885) and to an intermediate number in 1886 and 1890. Then came four years (1893-1896) in which the wheat acreage of the United States fluctuated between 34,000,000 and 35,000,000 acres. In 1897 there was a sudden rise to 39,465,000 acres, since which time the wheat acreage of the United States has not been less than 42,000,000 acres in any year, nor has the total product of any year been less than 500,000,000 bushels. Generally it has been above 600,000,000 bushels. Indeed, during this period (1897-1917) the annual yield has six times exceeded 700,000,000 bushels, the extremes being 522,000,000 bushels in 1900 and 1,025,000,000 bushels in the very productive year 1915.

Conclusions.

The problem is how to greatly increase our yield of wheat without increasing our acreage. It might be stated dramatically as how to obtain two bushels of wheat where we now harvest one. This would bring our wheat yield up nearly to that of the English and German wheat fields. I will not state the problem in just this way, however, because, as I have already said, it is too much to hope from a great continental area having many extremes of climate and probably less well adapted to wheat than Northwestern Europe, but to grow three half-bushels where we now grow two would bring our wheat yield up to the French yield (20 bushels per acre), and this seems practicable. In the 10 years immediately preceding the war France increased her wheat yield three bushels per acre, and we ought to be able to do even better than that in the United States. By increasing the fertility of our soils and by reducing the enormous losses due to insects and to fungous parasites, and in the other ways mentioned, it certainly can be done. It cannot be done, however, unless many people are willing to give prolonged and earnest thought to the subject, coupled with a vigorous nation-wide propaganda, employing every existing National and State agency and creating various new ones to deal with all the various difficulties inherent in the control of special groups of parasites and in the manufacture and sale at moderate prices of all the necessary wheat fertilizers, and particularly the nitrogenous fertilizers. It is a subject which concerns the whole nation, and one that should particularly interest bodies of scientific men.

*[NOTE—We hope that the estimate of 65,000,000 acres to be put in wheat may prove correct, but we are afraid it is much too high. If we have any such acreage in wheat the amount needed for seed would be nearly double the 50,000,000 bushels mentioned by Mr. Smith.—Editor MANUFACTURERS RECORD.]

If Static Electricity, Why Are German-Owned Gins Immune?

Austin, Tex., December 7—[Special.]—It was the original theory of Wallace Inglish, State fire marshal that the wholesale destruction of cotton gins by mysterious fires which have occurred in Texas during the past few weeks was the work of German or other enemies of this Government. Mr. Inglish says that after a thorough investigation into the possible origin of these fires he has been compelled to change his views. While it may be that some of the gins were destroyed by alien enemies, Mr. Inglish says, the more plausible theory is that static electricity is the real cause of most of the fires. Static electricity has been playing strange and never before heard of pranks in Texas during the period of unprecedented drought that prevails in a large area of the State. In some localities the electrical phenomena is so strong that it is impossible to operate cotton gins and other industrial plants. In some instances relief from the static electrical influence has been obtained by thoroughly soaking the ground around and beneath the cotton gins with water. This enables the grounding of the electrical energy with which the air is apparently discharged.

Mr. Inglish is of the belief that the static electricity is made to give forth sparks by the friction of the gin saws upon the cotton, thus igniting the fiber. He also thinks that many of these fires would be avoided if the gin saws were not screwed down so closely in order to get all the lint possible off of the seed.

Despite the theory that static electricity is the cause of the fires, the outstanding fact remains that of the many gins that have been burned, not one of them was owned by a German. It would seem that German-owned gins are fireproof just at this time.

The War and the Germans as Viewed by Our Readers

The Worst That America Can Do Is Better Than the Best the German Government Is Doing.

J. ALTON MCIVER, C. S. C., Clerk's Office, Carthage, North Carolina.

Enclosed find check for one year's subscription to the MANUFACTURERS RECORD. I agree with your view of the unreasonable freedom allowed the German press of our country. Why should I be asked to stop any treasonable talk by private citizens when a German devil is allowed to publish to the world the meanest abuse of our country and glorifications over German cruelty and success? Seems to me that it's time to say to every man, "You *must* be either pig or pup; quit cussing our country or get out of it." At the same time I am with our Government, first, last and all the time, whether I understand and endorse all it does or not. The worst our folks can do is far better than the best the German Government is doing for humanity.

Herewith a few placards displayed at the Sandhills Fair at Pinehurst, N. C., November 22-23, in the Food Administration Booth:

TOTE FAIR.

All your life our Government has helped you. Now it's your turn to help some.

TOTE FAIR.

A week in Hell would change some folks' opinions as to religion and freedom.

A week under German control might also make YOU a better American.

Anyway, think it over.

America proposes to use aeroplanes, Red Cross supply boats, sunshine crops: Powers from Above. Germany chooses submarines, torpedoes, mines, starvation, cruelty: Powers from Below. Typical, of course; but—which are YOU siding with? "Choose ye this day whom ye will serve."

6000 years ago God said: "You must not eat this." The Devil said: "Nothing in it; go ahead and eat what you want." Today our Government says: "Don't eat so much of this or that." The same enemy says again: "Nothing in it; go ahead and eat what you want." Shall your children and grandchildren wish in vain that you had listened?

Respect for Our Men at the Front Should Prevent Spending Our Money on Alien Musicians.

JNO. S. WAGNER, Morristown, Tenn.

I have been a regular reader of the MANUFACTURERS RECORD for some time, and every time I get through reading a copy I feel like it has made me a better citizen and a truer patriot. I truly regret that every publication in this country, from the metropolitan dailies to the little country weeklies, does not brim with that true spirit of Americanism and patriotism that the MANUFACTURERS RECORD does. If this were the case a more widespread patriotic spirit would dominate the atmosphere of this great country of ours. We would feel safer from the enemy, and as American citizens we would be more united.

It does my heart good to read a truly American paper like your publication. I have just read your

editorial on Dr. Muck of the Boston Symphony Orchestra, and I endorse every word of it.

I have often thought of this. I heard it stated recently by a party who had made a trip along our Southern coast, that the hotels and resorts he had visited were almost invariably filled by foreign or alien bands and orchestras. He was no musician, but took notice of this situation. Our best American musicians are sent to the front to battle for our salvation, while a gang of foreigners, who have no sympathy with us and no interest in us except to exploit us, step in and rake in all the money for music, chiefly because they can work cheaper than any self-respecting American can, and the bulk of the money spent for music in this country is paid to this foreign element. I am glad you take the stand you do. Some of our American music may not be so fine, but let our people put up with it until we can do better, and let us show the proper respect for our men in the army and navy by refusing to sit in an audience or throw money to any alien enemy musician or singer, which we cannot do and be true Americans. I trust you will continue your great work of education and that our people and the press may awake to the real truth of the situation that confronts us.

Good for This Public-Spirited Man! May His Tribe Increase!

T. L. SMITH, Columbia, Tex.

I enclose herewith postoffice money order for \$17, for which please send me, next express or parcel post, 100 copies of Rev. Newell Dwight Hillis' picture of Germany's war plans and her atrocities in Belgium and France; 100 copies of "America's Relation to the World War," and send to the Angleton Times, Angleton, Tex., one year's subscription to the MANUFACTURERS RECORD.

I have read the two pamphlets, and think both should be in the hands of every man, woman and child in our country, and it is my intention to see that everyone in this part of the country does see it.

Found in All Parts of the Country.

W. W. MORRISON, Hermann & Wolf, Cotton Merchants, New Orleans, La.

I enclose check covering subscription.

I wish to say that the vision of the MANUFACTURERS RECORD has been prophetic, and its influence has been and is wholly constructive.

It is fortunate that a publication of such courage and adequacy in dealing with serious problems is read by so many people.

I travel extensively and meet with the MANUFACTURERS RECORD in every part of the country.

Danish by Birth, He Knows from Experience the Evils of Germany's Power.

L. W. LARSEN, New Virginia Hotel, Norfolk, Va.

I am an American citizen for quite a number of years, and as loyal and true to the obligation and oath of allegiance as any citizen can be. I have been missing your paper, as I am in entire accord with the sentiments it expresses. I wish that all journals and publications were as clear and stoutly outspoken for right, justice and America and freedom for the world of democracy as the MANUFACTURERS RECORD.

I am but a mechanic, a millwright, a carpenter cabinetmaker, but I have seen lots of this world, and thought a great many things about the conditions of the world crisis as it is now, especially as I have intimate knowledge of the people of the warring countries. Germany must be conquered, brought to her knees and the Hohenzollern dynasty and the entire junker of military class overthrown, for as long as they are in power to fill the German people with ideas of a German world empire the masses of the people will back them up and starve and die in battle for German conquest. They have been brought gradually up to this from the time that Bismarck laid his plans for world empire. Either the allied nations must defeat Germany on the battlefield or Ger-

many will dominate the world; but I hope and pray that the allied nations will win, and they will when the American army reaches the battle line in full strength and power. I had a long sickness which resulted in the loss of my left eye, but I can see to do any mechanical work in my line. I can work to blueprints, am good at figures, and entirely reliable. If you should by chance hear of any position where an honest and fully reliable man is wanted as inspector or foreman or any other position, please remember me. I am 60 years old, and pronounced perfectly healthy except the loss of my left eye. I am a strong man, sober and steady. I was born in Denmark, and speak four languages—English, Danish, Swedish and German.

Pulpit Use of the Hillis Pamphlet.

DR. E. M. MURPHEY, Macon, Miss.

Enclosed find 50 cents in stamps, for which please send by return mail 10 copies of Dr. Hillis' address on Germany's war plans, etc.

I received the copies ordered from you a few days ago, and have had so many requests for them that I wish more. Loaned one copy to the Presbyterian minister, who used it in his sermon last Sunday, and he afterwards told me that I would never get it back. These pamphlets and your "America's Relation to the World War" should be in the hands of everybody in America.

Thanking you for putting these out in a form accessible to the general public.

Kentucky Editor Would See Traitors Hung.

ELLIOTT C. MITCHELL, the Paducah Evening Sun, Paducah, Ky.

Send me two copies of Dr. Newell Dwight Hillis' address in pamphlet form.

Permit me to say there is no American journal published today striking so vigorously and so consistently at the inexplicable tolerance some of our people are showing of hideous Germany. Nothing but the truth, and the truth without sugar-coating, will teach the American people the devil's soul they must conquer in Germany. We must see the traitors hung and the pacifists damned or our American heritage will be stamped into dishonor, and I am glad to see you tackle the work without hesitation or apology.

Eagerly Read by Soldier in Camp.

W. S. JACOK, Second Lieut., 82d Field Artillery, Camp Logan, Texas.

Through the courtesy of some of your subscribers I have had the privilege of reading your magazine for the last month. I was a regular subscriber to the MANUFACTURERS RECORD before entering the army, and discontinued it only because I did not think I would have the time to read it. However, when a copy gets into my hands I cannot put it down until I have read it from cover to cover.

I am very anxious to read Rev. Newell Dwight Hillis' "Germany's War Plans and Her Atrocities." Also send me some copies of "America's Relation to the World War," and if you have any copies on hand, the letters of the Baptist ministers would be greatly appreciated.

Passing It Along to Those in Need of Information.

C. C. WEDDING, President American Valve & Tank Co., Fairmont, W. Va.

It is almost impossible for me to tell you just how much I appreciate the MANUFACTURERS RECORD, and especially the manner in which you are handling this war situation. I make use of every issue by passing it to those in our neighborhood who are in need of the information and its influence. It is too bad that we have not in this country many more such publications.

Wishing you success, and assuring you that we would be only too glad to co-operate with you in any way.

The Coal Operators of America Defended

[The following is a statement on the proposed pooling plan made by A. W. Dean, secretary Pittsburgh & Ohio Mining Co., Cleveland, Ohio, and issued by the American Coal Journal. The statement is of particular interest at this time on account of the great coal shortage and the ceaseless efforts to discredit the coal industry as a whole.—Editor Manufacturers Record.]

The indictment several months ago of a number of the largest producers of domestic and marine coal from the smokeless district, charged with conspiring to violate the anti-trust law, was blazoned luridly in the daily newspapers, stories appearing on every phase of the matter until the men were honorably acquitted.

When more than 300 operators of coal mines and shippers in Ohio, Kentucky, West Virginia and Western Pennsylvania, representing millions of tons of coal production annually, got together the other day and laid the groundwork for a nation-wide pooling plan to relieve the coal famine and help the railroads, the matter created comparatively brief mention in the daily papers.

The contrasting treatment these two events affecting the coal industry received in the news columns certainly is not an indication of their relative importance as news items. Neither is it an indication of malice on the part of the newspapers. It is simply rather clear proof that a wall of misunderstanding exists which shuts off the public from an unclouded view of the coal industry and has prevented the growth of anything like a sympathetic understanding of the problems of the coal operator, in the minds of the public.

The indictment of coal producers, the men whose product goes in part to the domestic consumer, was an occurrence in a court "covered" daily by representatives of all the newspapers. The facts were simple, accessible and easy to understand.

The reporter needed no special knowledge of conditions to write his story. The facts were there in front of him, and it was easy to inform the public in good-sized type, that these men were accused of law violations. That the public inference might be and probably was, that the accused coal operators were guilty and deserving of punishment, doubtless did not enter the minds of either the reporters who wrote the stories or the editors who adorned the reporters' copy with elaborate headlines. The newspapers merely presented the facts as they appeared of record and let it go at that. The public with ears for decades attuned to such terms as "coal barons," "fuel hogs" or "malefactors of great wealth," needed no comment to be able to draw a wrong conclusion.

Now, when the coal men met the other day and took one of the most constructive and patriotic steps yet taken by any American industry looking toward the winning of the war, the facts were not so obvious to the reporters, albeit as a class they are keen minded and extremely discerning. The newspapers grasped the one fact, that the coal men were about to adopt a plan to expedite the delivery of coal, but some apparently confused by such technical terms as pooling, interchange and cross hauls, did not grasp the vastly far-reaching import of the plans. Whatever may have been the cause, the result has been that news accounts of the indictment of the coal men referred to was given vastly more newspaper space than was given to a movement which will shortly be felt around the world and which means self-effacement and sacrifice to an unbelievable extent on the part of the "coal barons."

The organization of the Coal Shippers' Terminal Pool Association in Cleveland November 21 has been termed in a broad way as one thing needful to win the war.

For many months we have had a constantly increasing industrial demand for coal to keep pace with the enormous requirements of the factories turning out munitions of war.

For example, the Bethlehem Steel Co. is consuming more coal than ever before at its furnaces, and on January 1 will come into the market for 250,000 tons additional. This with increased working hours in many industries and the speeding up of railroad activities has combined to cause a demand for coal far in excess of any previous year. Also a big tonnage of coal

for military and naval purposes is now required by the government, amounting to 400 per cent. over any normal year.

The coal men have not fallen down on the production end of the industry because figures show that the tonnage of soft coal for the first eight months of this year is 363,534,293 tons, exceeding the output for the same period in 1916 by 36,947,345 tons.

In the face of this unprecedented demand, the inability of the railroads to move coal cars fast enough, has compelled the nation's coal mines to operate at not more than 50 per cent. of their actual capacity. From every coal producing State has come reports of enormous tonnage lost because the railroads could not place sufficient cars at the mines.

On August 21, following a hurried consideration of the matter, the Federal Government under authority of the Food Bill, announced a definite regulation of the coal industry and a revision of prices, the object being to lessen the cost of coal to the public.

The coal operators accepted the Government program to revise prices downward, knowing full well in their own minds that a mistake had been made and that production would be lessened thereby, but with full confidence that in due course the situation would be righted. All the while no Governmental effort was made touching on the cause of the prices complained of and the production problem by reason of the car shortage became increasingly more of a menace.

Less than a fortnight ago, a group of bituminous coal operators, "coal barons," if you please, but with patriotic Americans, men of vision and capable executives, decided that the greatest possible production and best distribution of coal could be secured through the establishment of pools at all main distributing points and congested terminals. The proposal was discussed with Homer H. Johnston, fuel administrator for Ohio, and on November 14 coal shippers and officials of coal carrying railroads met with Mr. Johnson and the fuel administrators of other States.

The proposal for the establishment of terminal pools for the distribution of all coal was instantly approved. State Administrator Johnson at once went to Washington to urge Governmental approval of the plan, and when a meeting of several hundred coal shippers and railroad men was held in Cleveland November 21 was able to assure them that the Government would back the pooling plan to the limit.

At this meeting, November 21, the pooling plan became a reality. Resolutions were passed urging its national application. There is now little question that the plan will not only become national in scope as applied to coal, but may be applied to other commodities.

The adoption of the pooling plan was not forced on the coal operators, but was evolved by them and carried to completion by them.

The plan is as broad as the nation and is to set the pace for other industries.

It has been characterized as the biggest constructive movement made by any industry since the United States entered the war, because coal is a basic supply on which practically all industrial activities depend. Without sufficient coal there will be no electric power, light or heat; transportation will stop and the manufacture of munitions and all commodities cease.

The pooling plan is the answer of the coal operator to his foes and critics. It is real evidence that right is always right and the truth will always prevail.

Recently a number of newspapers printed a cartoon caricaturing the crucifixion scene. At the foot of the crosses, a number of men were shown gambling for the clothing of the figures on the cross. One of those in the gambling group was labeled "coal operator."

The coal shippers have been accused of being profiteers and of lacking patriotism. In reply they have called no names; have made no stinging retorts.

The pool plan was inaugurated by the coal industry

not in self-defense, but for national defense, as the greatest step to co-operate with the Government to win the war, that any industry has voluntarily taken. It has proven to the public that the coal operators are worthy to retain control of their own business and able to lend a helping hand to the transportation industry.

This is no time to call names, and when the railroads accept a resolution which sets forth the fact that the condition of their motive power and congestion at terminals is the cause for the present coal shortage the case of the coal man is closed.

The adoption of the pooling plan and the results which must inevitably follow it should tear down the wall of misunderstanding which has been allowed to exist between the public and the coal industry, because as surely as the boys in General Pershing's American Expeditionary force are fighting to make the world safe for democracy so surely are the coal producers mobilized to stand behind that army until a victorious peace is attained.

The Sugar Situation in Louisiana.

New Orleans, La., December 8—[Special.]—The beginning of the end of the 1917 sugar-grinding season in Louisiana has begun. Three small factories on Bayou Lafourche in parish of Assumption have finished for the season.

Sugar is being crowded into every available warehouse in the Louisiana sugar district waiting for the cars that are to come some day to take it to those people of the nation who are in most desperate straits for it now. Box cars have become scarce week by week, and fuel oil tank cars, too, so that sugar cannot be shipped, and many of the mills without fuel oil have had to stop for days while frantically endeavoring to get delivery on their fuel-oil contracts.

The Ficker Manufacturing Co., Inc., is making glycerine from sugar now at its factory here, and this week increased its capital stock to \$20,000 to enlarge the output. This company was started about a month ago.

Sugar district banks at several points, Donaldsonville, La., and other sugar-belt towns, are making ready to increase their capital stocks, in most cases to double the present capitalization. At the same time, sugar lands are going up in price, notwithstanding the discouragement of the sugar district farmers, caused by Congressional and other continued national harassing.

David J. Lewis, sugar member of the Federal Tariff Commission, was in the Louisiana sugar district this week "visualizing."

All of the houses that were making subscription raw sugar for the American Sugar Refining Co., as per their Planters' Committee agreement for 25,000 tons, have finished their quotas and are gladly turning toward high-grade sugar manufacture, to which they would have devoted themselves exclusively this year except that they felt they should acquit their committee obligations. Putting the necessities of the sugar-famished spots in the United States before every other consideration, they are making the most strenuous efforts to dispatch sugar to their fellow-citizens who need it most, while the Sugar Refiners' Control Committee at Washington D. C., in order to discourage the wholesale making of good molasses and encourage the greater manufacture of raw sugar for their use, has announced its intention to regulate the price of cane syrup and molasses, as it had once before said it would not. Cane syrup and edible molasses are made only in Louisiana, and in none of the other cane countries of the world.

Waterfront Improvement Proposed for Corpus Christi.

Corpus Christi, Tex., December 7—[Special.]—The City Council has voted to call a special election for Wednesday, January 2, on the issuance of \$600,000 bonds for the improvement of Corpus Christi's waterfront.

The last Legislature, at the regular session, passed a bill giving the city of Corpus Christi for a period of 15 years all ad valorem taxes of Nueces county, and this amount it is estimated will be sufficient to pay 5 per cent. interest charges on the \$600,000 bond issue and to create a sinking fund for the retirement of the bonds at the end of 15 years.

It is predicted that the vote will be practically unanimous for the issue. The bonds will be serially

News and Views from Our Readers

A Fine Type of an American Boy's Patriotism and Grit.

THE KINGSVILLE LUMBER CO., Kingsville, Tex.

We are enclosing copy of letter of young J. B. Scarborough, a 17-year-old boy enlisting from here in the navy. He is now in the Great Lakes training station, and has undergone one operation for appendicitis, and the doctors now tell him that he will have to undergo another operation to get well and make him fit for service. His letter will indicate the stand that he takes on this subject, and he also returned the check for \$75 which was sent him by his father for expenses to come home on a furlough. You can see the patriotism shown by this young lad, which is a spirit that will conquer the "Hun."

The letter from this young soldier was as follows:

Great Lakes, Ill., November 18.

Dear Father:

In answer to yours of the 15th, will say that I certainly would like to be with you for a while. I can get a furlough now, but I am afraid to take it, as the doctors want to give me a medical discharge since I have been operated on, and if I come home they might mail me one, and if I stay here I won't take it and they won't force me to. They tell me that if I stay I will have to have another operation. While I don't like operations, I will take another one before I will take a discharge. I wanted to go to France when I left home, and I still want to go, so I am returning the check you sent me. I have plenty of money now. I think I will be on duty in a few days and riding the waves. Be cheerful, and don't worry about me. I will come back.

Your son,
J. B. SCARBOROUGH.

Good Roads Essential to Increased Food Production.

A. D. ALDERSON, Vice-President and Manager Tioga Gravel Co., Ltd., Alexandria, La.

Noting your editorial in the MANUFACTURERS RECORD of November 22, I wish to congratulate you on bringing Mr. Lovett out in the open. No one has been able to get an expression from him heretofore. You will recall my contention that the railroads have been and are still fighting the good-roads movement. You are, of course, aware of the fact that the railroads must be rehabilitated financially, at least to a certain extent, either through refinancing or extra revenue by freight raises. The public is, of course, paying for the exploitation of these stocks in the past. Naturally, the more entirely the public is made dependent upon the railroads the greater value railroad securities will have. A recent article by Mr. Vanderlip, which you no doubt noticed, coming from a man so intimately associated with railroad financing, would indicate a trend in the direction above referred to. Quite a coincidence at this time is the action of the American Bankers' Association in session recently, when a resolution was passed calling upon all the banks to refuse to buy any good-roads bonds during the period of the war. I am firmly of the opinion that concerted action was and is being taken to cripple, if not to destroy, the good-roads movement. I understand a bill is to be introduced in Congress this year providing for the building by the Government, through State highway departments or otherwise, of a hard-surfaced road from each of the army camps to the nearest seaport, in order to facilitate the movement of troops and supplies from these bases. This would, in a measure, relieve the situation for material producers in these vicinities, but of course would not be a general relief.

Some plants, such as the one owned by Mr. Lovett's Southern Pacific Co. at Valde Rouge, La., pump their gravel and can load it in boxcars, but nine-tenths of the roads in this State and many other Southern States are built of pit run or bank gravel, and the only way in the world it can be loaded is with steam shovels, so nothing but open cars can be used. You will therefore readily understand the injustice of taking from us the only kind of cars we can possibly use, especially when the same cars are used for hauling automobiles and other articles used strictly for pleasure and convenience.

The prime necessity at this time is the production

of foodstuffs. People are to a great extent selfish. The farmers are not going to raise food products just because Mr. Hoover says so. Neither is a certain farmer going to increase his production of foodstuffs because Mr. Hoover asks that he do so, especially when his inability to get perishable foodstuffs to market is going to cause him a financial loss. The only real effective manner of bringing about a substantial increase in the production of food is to bring more farm land into cultivation, especially in Southern States, where the seasons are long. The one and only thing which has ever done or ever will do this is the building of good roads, and drainage, which necessarily goes hand in hand with road building. Automatically this solves our greatest economic problem—the reduction of living cost by the enlargement of good living possibilities and the relief of congested districts by making productive areas not now in cultivation, and families now living in the cities who are not producing anything for the support of the community at large.

The MANUFACTURERS RECORD seems to be the only paper of extensive circulation with executive nerve enough back of it to take the gloves off and handle facts, and unless you and the minority of the same disposition undertake right now to save the good-roads movement it is going to suffer a serious set-back, which will destroy the psychological opportunity which is now presented for a large and permanent expansion along agricultural lines, which, as you know, means general prosperity throughout this nation. The building of hard-surfaced roads is just as important to the individual producer, and therefore to all the people, as is the nursing and rehabilitating of a lot of railroads, which are in their present condition of incompetency as a result of years of unscrupulous exploitation.

I sincerely trust that you will continue to see fit to give the necessary space to the discussion of this subject.

Wise and Proper Recommendations of Railroads War Board.

T. J. SHELTON, Traffic Manager The Arkansas & Louisiana Midland Railway Co., Monroe, La.

This office has noted with great satisfaction the recent recommendation of the Railroads War Board that the Government take the following steps immediately:

1. Transfer as far as possible the movement of foodstuffs and other export commodities to Southern ports to relieve congestion in North Atlantic ports.

2. Require wherever possible the building of war industrial plants in territory other than the Eastern seaboard.

Of course, the MANUFACTURERS RECORD has been fighting for these very things for years, and I rather think its utterances along these lines have had considerable influence with the Railroads War Board.

Of course, in saying this I am simply speaking as an individual, and not in my official capacity. At any rate, the recommendations are undoubtedly wise and proper at this time, and should mean a great deal for the South and Southwest.

The Result of Yielding Principle for Supposed Expediency in the Railroad Brotherhood's Hold-Up of Congress.

D. C. EARNEST, Hoyt Lignite Coal, Dallas, Tex.

A short time ago, when the Railway Brotherhood made their outrageous demands on the railroads and threatened to tie up the business of this country and prevent any supplies being sent to our own men as well as our allies, the railroad managers not only agreed to arbitrate, but they finally told the President of the United States that they would turn over their properties to the Government, to be used as the Government saw fit. It occurred to me at the time that this was most generous on the part of the railroads, but just a few days later the President of the United States, in his speech at Buffalo to laboring men, used practically this language:

"You sometimes stop the courses of labor, but there

are others who do the same, and I believe that I am speaking of my own experience not only, but of the experience of others, when I say that you are more reasonable in a larger number of cases than the capitolists."

Of course anything in the way of criticism of the President of the United States is, at a time like this especially, considered very unwise, but unless we are to Germanize ourselves I think that legitimate criticism of the President and his policies is proper at any time. The question is, was it fair for the President to make any such statement as he did?

We all know that prior to this country entering the war the Railway Brotherhood threatened to tie up the railroads of this country. Many of the shrewdest business men in this country at that time thought that the Railway Brotherhood should be permitted to strike, because the sentiment of the great masses of the people was against them. However, they forced the President and Congress to the passage of the Adamson law. It is my recollection that his law was finally passed about midnight on a certain Saturday night, and, although the President had notified the leaders of the Brotherhood that he would sign the bill after it was passed, he was compelled to sign this law on the following Sunday in order to avert a strike on Monday morning, Monday morning being the time limit set by the Brotherhood. It must be remembered in connection with the foregoing that before the passage of the Adamson law the railroads offered to arbitrate, and the Brotherhood refused to arbitrate. In view of all this, is it not a fact that the President's speech, to say the least, was most ungenerous to the railroad people?

It is true that since the President of the United States finally decided to get into the war he has accomplished wonders, considering the fact that he had such opposition as La Follette, Stone, McLemore and others. However, had this country gone into the war at the proper time, that is, immediately after the sinking of the Lusitania, Germany would have been licked long ago, millions of lives would have been saved, and President Wilson would have been hailed as the greatest President this country has ever known.

Most of Contracts Secured Through Manufacturers Record Information.

WALTER S. THOMSON, Superintendent Mexia Quarry Co., Tehuacana, Tex.

I have been a reader of your paper for over two years, and I think it is the most valuable paper I can get hold of, especially what is going on in the way of construction. Most of our contracts are gotten by information out of your paper.

I enjoy your notes on the war, and always anxiously await the coming of your paper, and wish they would come oftener.

Perceiving the Vital Problems of the Day.

LOUIS A. FREDMAN, Manager Technology Sales Co., Inc., New York.

Herewith our check for \$5, being renewal of subscription for one year.

We cannot let this occasion go by without expressing to you how much we have admired the clearness, force and foresight which you have displayed in perceiving the vital problems of our day and of bringing them to the consciousness of not only your subscribers and readers, but also of a public which knows of your work only through its great ramifications.

Evident Need for Cotton Warehouse

D. J. ANDERSON, Shaw, Miss.

I want information about cotton warehouses—dimensions and requirements. This town handles and gins about 30,000 bales per season, and there is no warehouse here. There is today not less than 10,000 bales lying around the gins and yards with absolutely no protection from fire or the elements, and the opening for a cotton warehouse is evident.

A Danger and a Neglected Opportunity

By VICTOR V. KELSEY and STUART W. MAHER, Industrial Department, Carolina, Clinchfield & Ohio Railway, Johnson City, Tenn.

This country is now building a vast number of airplanes, and the industry may be reasonably expected to rival the automobile industry in growth, even after the war stimulus is removed. Linen is the only fabric which has been found to give entire satisfaction for the wing covering of airplanes, and an enormous yardage of this textile will be required to complete our air program.

Where will we get this linen?

Examination shows that we are in much the same situation on this point that we were with regard to synthetic dyes at the beginning of the war.

Starting with the growing of the raw flax, we find that Russia raises three-fourths of the world's supply, with Austria-Hungary and France next in order of acreage. Russia may be forced into an economic union against the Allies, Austria-Hungary will certainly be against us, and France's industry will require years to recover from the damage of the war.

If conditions are bad with respect to the growing of flax, they are little better with respect to spinning. The United Kingdom has 1,161,874 spindles, of which about 1,000,000 are in Ireland. France, Russia and Belgium are next in order of their importance as spinners of flax, with the United States last of all, with but 8612 spindles.

Ireland imports three-fourths of her fiber, and France imports no less than four-fifths of hers. Thus, directly and indirectly, we are dependent on badly crippled and enemy nations for this vital necessity.

What is the commercial aspect of the problem? Is the industry not of sufficient magnitude to be supported in this country, or are conditions unfavorable?

In answer to the first question, it may be replied that in the fiscal year 1913 we imported flax fiber to the extent of \$3,950,020 and linen goods to the extent of \$28,208,844.

The second question can be answered by saying that flax requires a cool, damp climate and a well-drained loam soil. These conditions are found in several parts of the country, and pre-eminently in the Southern Appalachian region. To be more specific, we refer to the large valleys in the mountains of Kentucky, Southwest Virginia, East Tennessee and Western North Carolina. A considerable amount of flax was raised in this region by the first settlers, and found local use for garments. No attempt was made to grow the crop on a commercial scale.

Flax fiber grown in the Puget Sound region and sent to Ireland compared favorably with the best Belgian product. A certain amount of flax of good quality is raised in Michigan, Wisconsin and Minnesota. Climatic conditions in these States are strikingly similar to those of certain parts of the Southern Appalachians.

The South has an opportunity to furnish the nation a necessity and a new and valuable industry. Will it do it? Or will the dyestuff situation be re-enacted for want of initiative?

Whenever they have a hot summer and fall with rain in Dakota, Minnesota and all through the Northwest and Ontario they secure a good crop of seed and fiber, but if the weather is cold and damp it does not mature well and the yield falls off. Heat and moisture are decidedly what it needs to grow good flax, and that we have in the South.

There was residing at St. Mary's a remarkably intelligent Russian, a retired sergeant from our army, who was a farmer in Russia and understood growing flax and using the fiber and seed, and he kept a close watch with me on what we did at St. Mary's. He assures me we can surely grow better flax fiber and seed than can be grown in Russia.

Ireland, Belgium and England all have poor crops of flax when it is cold in the fall and only one crop a year can be raised. Fifty years ago this summer I personally inspected the flax growing, retting and utilizing the fiber in both Ireland and Belgium. Flax can be grown on all the islands south of Savannah, and one general manager can see to it all—Sapillo, St. Simons, Cumberland, Amelia and other islands.

The Department of Agriculture reports about 25 per cent. loss in this year's crop of flax in the United States. This was due to a cold, late spring, and Canada's crop was nearly a failure for the same reason. Flax wants the sunny South.

The United States Government, through the Department of Agriculture, should now proceed to carry to a complete success the growing of flax in the South. The Government has in Camden county, Georgia, at the mouth of the St. Mary's River, near to St. Mary's, Ga., and Fernandina, Fla., on Cumberland Sound at Point Peter, 600 acres of fine, well-cleaned land that is available right away; 25 feet of water at the docks and depth direct to ocean, a distance of only four miles. It is also on the inside route from the North on the way to Miami, Fla., and to the St. John's River, with rail and water connections to all points. The city of St. Mary's is close by and the St. Mary's River navigable over fifty miles, and here we have one of the most important matters connected with the growing and treating of flax straw—the finest water and climate for retting purposes to be found anywhere, superior to the famous River Lys and Courtrai lands in Belgium, and they can only grow one crop there each year, while here we grow continuously 365 days in the year, with continuous retting and treating. The water in St. Mary's River has no superior for this purpose and is known everywhere for its purity.

In regard to the variety of seed to sow, will say sow what will produce the best grade of fiber and secure what seed we can—fiber first, seed second. But I am satisfied from trials made we will get fine seed crop from fiber seed. Seed matures better in the Southern climate than in a colder climate. The Government must positively furnish seed and show the farmers how to grow it, and they will then plant millions of acres, as it will pay better than cotton, corn or any other crop, and is a sure crop.

In the matter of cultivation, land can be plowed and harrowed with tractors and must be made as smooth as possible, so that the flax will grow an even length, and when harvested it can be cut closer with the reaper and thus secure longer straw. Reap and bind with machinery and take the whole, straw, seed and all, direct to a retting mill, where the grower will be paid cash for his seed and straw. No extra hand labor is needed. If for any reason pulled straw is needed, plenty of young colored help, male and female, are ready to pull it. Seed will always be wanted and will pay for all expenses of raising, and the fiber will be very profitable to the farmer as a cash crop the year round.

At St. Mary's arrangements have been made with linseed-oil people, and they will take all seed that can possibly be produced; also with a Belgian linen manufacturer, who will erect a linen factory and receive all the straw and treat it, securing the best of the fiber from the straw for their own work and turning all the balance over to a paper mill already constructed and running at St. Mary's, Ga., for paper making.

The seed will be treated in a scientific manner and will produce a superior grade of linseed oil, and the meal will be free from all deleterious substances and will make the best of food for all kinds of livestock.

There are in the South untold millions of acres of idle lands waiting to be utilized. On the abandoned rice fields flax will grow to large size and yield an abundance of seed and fiber.

Flax-Growing in South Declared to Be Highly Profitable

EXPERIMENTER GIVES RESULTS TO PROVE THAT WARM CLIMATE IS MOST FAVORABLE — CLAIMS COULD BE MADE CONTINUOUS CASH CROP — NEEDS FOR LINEN INCENTIVE FOR LARGE PRODUCTION

By BURDETT LOOMIS, Hartford, Conn.

No country in the world is to be compared to the South for flax growing.

It has all the advantages that other countries have and many more, chief among which is the fact that in the South it may be made a continuous crop, three crops a year, while but one crop a year is made elsewhere.

There is a most urgent need that the South should grow flax now, for other sources of supply are short or have failed entirely. It is impossible to get flax from Russia, the world's most abundant source of supply under ordinary conditions. England has taken over the yield of Ireland, and Germany has possession of Belgium's fields of flax. The flax of Canada and the United States is insufficient for our needs, and a serious shortage confronts us.

Our war uses for linen, for which cotton cannot well be substituted, include airplanes, waterproof tarpaulin, maxim belts, army clothing, web equipment, army boots, leather equipment, bandoliers, breech covers, hussifs, army tents and marquees, harness and saddleery, water-bottle covers, projectile slings, bomb slings, nose bugs, haversacks, holdalls, surgical supplies, intrenching-tool covers and many other articles, such as ponchos, canteen covers, cartridge belts and the like.

Flax, both for fiber and seed, can be made a very profitable crop in the South, as I know from my own experience.

There is every reason, therefore, patriotic and commercial, why the South should go extensively into the production of flax at this time.

Before the Civil War the best of flax was grown in the South, the best of linen was made there for many years, and never had there been produced as good linseed oil from flaxseed as was made in Virginia from flaxseed grown in the South at that time. Old farmers in Georgia and Florida remember well as children

that flax was grown on most of the farms there for home use and made fine linen.

We have been led to believe that flax must be grown in a cold climate, and so the new lands in the Northwest were utilized. This is positively all wrong. Southern lands and climate are far better, and I have proved it. For two years at my own expense I have been experimenting on growing flax in the South at all times of the year. It is a mistaken idea that it must have a cold climate; hot weather suits it as well as cold, or better, and it will grow rapidly in summer, fall and winter all over Southern Georgia and Florida and other States, and through to California. Three crops can be secured in a year, or two crops of flax and one of kaffir corn, cowpeas or beans.

I have resided at St. Mary's, Ga., over twenty months out of twenty-four and have kept close attention to every detail, testing all kinds of land, making new plantings monthly and at over forty different times and places, and never had a failure. The plant grows rapidly and will endure a drought better than other crops. From seeds sown in September can be secured a crop of seed and fiber in December and January, and takes about 110 days to mature at that time. Seeds sown in February, March and April grow faster, and from 90 to 100 days will produce a crop.

I have grown flax as far south as Tampa, Fla., and at Waycross and Folkstone, Ga., and seed and fiber were both of fine quality.

John R. Fain, professor of agronomy at the State College of Agriculture, Athens, Ga., has sent me a sample of flax grown the past summer at Athens, and it has a fine crop of seed and fiber.

Flax is always a failure in the North when spring weather is cold or there is a cold fall. It needs heat to start it, heat to grow it, and heat to make good fiber and seed. There is no end to the amount that can be grown, and the demand is unlimited. There is thus no chance of failure. By continuous cropping in the South you may be always sure of a supply.

German Art and Science Strut in Borrowed Plumage

By TOWNES R. LEIGH, Ph.D., Georgetown, Ky.

Not many years ago the celebrated Bunsen, himself not a Hebrew, but of pure Teutonic stock, acknowledged that the Jews were the vanguard of German learning, and observed that the greater part of the eminent professors at the German universities and academies were of Israelitish origin—Neander, Gans, Banary, Weil, Renfey, Stahl, Derdberg, Valentin, Lazarus, Herz, etc., each the pastmaster of his specialty. This well-authenticated fact becomes more startling when we realize that the Jewish population of Germany is very little over 1 per cent. of the whole, and positively staggering when it is learned that the half has not been told by Bunsen concerning the intellectual contribution made by the Jews to the native Teutons. Dr. Stöcker, formerly leader of the anti-Semitic movement in Germany, came more nearly illustrating the truth when he said: "At the post-mortem examination of a body lately there were present the physician, the lawyer, the surgeon and a fourth official, all of whom were Jews. None but the corpse was a German. Behold a picture!" The banker of the deceased was a Jew; so were his old tutor and the artists who had decorated his mansion.

As illustrious as has been the exact scholarship of the German Jews, as was pointed out by Bunsen, it is surpassed by their contributions to the music and literature commonly attributed to the Teuton. Felix Mendelssohn, enrapturing the world with sweetest strains; Meyerbeer, uniting in operatic composition the flowing melody of the Italians, the solid harmony of the Germans and the varied, piquant rhythm of the French; Moscheles, blending loftiness of style with fine emotional improvisation, the pioneer of developing the various modifications of tone by touch, afterwards exploited by the Germans; Ernst, the renowned violinist—were Jews all. The list could be extended indefinitely in support of the fact that the so-called German music is in truth strongly Israelitish, but the following incident will carry greater weight than a long catalogue of celebrated names:

Wagner once wrote a diatribe against Jewish influence in German music, and it is recorded that he prepared a composition to prove the superiority of pure Teutonic taste and skill over those of the Hebrews; but when the time for the performance arrived, the patriotic master beheld his first violins all in the hands of the sons of Abraham, whose dark eyes were scanning serenely the tangled score. To his chagrin, Wagner discovered that none but Jews could be found skilled enough to carry the performance successfully through. Selah!

The dulcet verse and the poetic prose of the Chosen People have also added a glory-crown to the Teuton. Heine, whose songs have the freshness and the melody of the skylark's note and whose Lorelei is sung beneath both "palm and pine," was of the tribe of Israel; so were the gifted poets Wessely and Rodenberg; likewise was Auerbach, the greatest of all the German novelists. It is indeed a sad commentary upon the native Teutons that it remained for a Jew to delineate for the world the real peasant life and character of the Germans.

Other illustrious German-Jews arise in my mind like flowers at the approach of their season. There stand Börne, the keen satirist and political writer, like the brilliant cockscomb; yonder, Bendemann, the gifted painter, like the heliotrope in full bloom; here, Herz, the noted physician, with Traube by his side, reminding me of a cluster of heartsease; there, Jost, the prince among historians, and Fürst, the erudite lexicographer, and Steinschneider, the versatile bibliographer, and Deutsch, the renowned orientalist, like a bed of immortelles; yonder, behold the grand, esthetic Moses Mendelssohn, whose learning was as varied as the colors of the cosmos; there, M. Beer, the noted dramatist, and his brother, W. Beer, the famous astronomer; the one the passion flower, the other the starry jessamine; there, like the golden-glow, stand the philanthropist, Hirsch, contributing upward of \$25,000,000 for education and charity, and Jacob Bartholdy, the munificent patron of fine arts; nearby Meyer Anselm, the forebear of the Rothschilds, the bankers of nations, resembling the fertile golden-rod, and in the center stand Lasker, the statesman, gloriously erect with his face upturned

boldly to the day star, not unlike a tall sunflower. Lasker was the ablest debater that ever spoke in the Reichstag, a brave man with a brave following, who, in company with his fellow-Hebrews, Bamberger and Oppenheim, dared to hook the Leviathan himself, the haughty Prince Bismarck, for placing obstacles in the path of freedom. It was this high-minded champion who triumphed over the Squirearchy which would steal the liberties of the people. He it was who, with the adroitness of Disraeli and with the boldness of Castelar, both of Jewish strain, disclosed the discreditable railroad delinquencies of Count Itzenplitz and Prince Pulibus, high-born functionaries in special favor with the Kaiser. There never lived a Prussian who could cope with this Hebrew in an intellectual wrestle. Had Germany turned over the reins of the Government to Lasker the present war would never have been inaugurated, for the liberty of the common people is the mother of peace.

The best guarantee that we can obtain from Germany that she will not again incarnadine the world with blood is to place the German-Jew in political control of that country. The Germans were a gory tribe before the Jews, bearing gifts "more precious than rubies," came among them. Under Jewish influence and inspiration the Germans have improved, but there is much the Jew can yet do for them. *There is a conscience in Jewish culture; there is none in Prussian Kultur.* Even the Germans themselves have recognized the benign influence of the Jew. Frederick the Great held that "to oppress the Jews never brought anyone or any nation prosperity;" to pull up flowers gives wild weeds a better chance to grow. Frederick William, the elector of Prandenburg, acknowledged his indebtedness for success not to his Teutonic subjects, but to the zealous services of two German-Jews, Gompertz and Elias. Had the present Kaiser paid heed to the counsel and example of his Jews, he would not go down in history as "Bill, the Bloody Butcher of Berlin;" instead, he would be known as William the Wise.

When a list is made of the distinguished men who are not Jews and who are usually attributed to Germany an amazing truth flashes forth—a large proportion of the so-called German celebrities are not native to the soil. Fichte, the great metaphysician, was of Swedish origin; Kant, the determining factor in philosophy, was of Scotch extraction, and his ethical doctrines embody prominent features of Scottish nationality; Reinken, the celebrated Hamburg organist, was a Hollander, and Beethoven was of Holland descent; Bach was from an ancient family that moved into Germany; Dürer, the founder of the famous German school of painters, was the son of a goldsmith who settled in Germany; Rubens, the noted artist, was of Flemish parentage; neither Schubert, Gluck, Johann Strauss nor Josef Haydn was born in Germany.

Great is Germany's debt to her Jews and other step-sons!

Texas Quicksilver Plays a Part in Carrying on the War

Austin, Tex., December 8—[Special.]—Development of the quicksilver deposits, the sulphur beds and the silver and copper mines of the upper border region of Texas has been greatly stimulated by the existing high prices of these minerals, according to the statement of Dr. William B. Phillips, formerly director of the Bureau of Economic Geology and Technology of the University of Texas. Dr. Phillips has just returned from a trip through that region. The activities in the Terlingua quicksilver district are unusually brisk. Notwithstanding the fact that the mines of cinnabar ore, from which the quicksilver is obtained by means of treatment in furnaces, are situated 90 to 100 miles from the nearest railroad point, the extraordinary high price for which the liquid mineral is selling has caused the reopening of old mines and the inauguration of much prospecting work.

Dr. Phillips said:

"In addition to oil, there are three Texas products that are urgently required for war purposes—cotton,

sulphur and quicksilver—which go into the manufacture of high explosives. The statement has been made that a big gun uses a bale of cotton every two shots, while a machine-gun squad uses a bale in three minutes. Cotton is the basis of many of the high explosives because it is almost pure cellulose and is the starting point for many powders and explosives.

"There is sulphur also, which, either as sulphur itself or as sulphuric acid, enters into the composition of a great many things required in war. Texas and Louisiana produce nearly all of the sulphur in the entire country, and were it not for the great mines at Freeport and Sulphur we would be in a sad plight, not only for war material, but also for fertilizers and many other things. The commercial opening of the Culberson county sulphur deposits waits upon the construction of a railroad into the district.

"The part that quicksilver plays in the war is not so evident, but is quite as important. It is used in making fulminate of mercury, which is a detonator for both low and high explosives. The quicksilver mines in Texas are in the southern part of Brewster county, 400 miles west of San Antonio. The existence of cinnebar (sulphide of mercury or quicksilver) in that part of Texas has been definitely known since 1894, but it was not until 1897-98 that any efforts were made to utilize the discovery. Since that time, however, the total production has been about 75,000 flasks of 75 pounds net, worth, at present prices, \$7,500,000."

Texas Irrigated Farms Bring Big Yields.

San Benito, Tex., December 6—[Special.]—Prospects are favorable for the largest winter truck crop in the lower Rio Grande Valley that has ever been grown here. The planting season has been moved up more than a month over any previous year, the purpose of this being to bring about the maturing and marketing of the products in order to avoid the possibility of damage by freezes, which usually come in February. Most of the cabbage plants have already been set out, and are in prime condition. Several of the larger irrigation systems have been extended, and the cultivated area of the valley region will be several thousand acres more than last year.

Although the protracted drought caused crop failures throughout South Texas this year where dry farming was practiced, the irrigated lands of the Lower Rio Grande Valley produced more abundant yields than ever before. Corn is being shipped from here to other parts of the State. Two crops of corn are harvested upon the same land, each crop yielding an average of about 50 bushels per acre. The hay and other forage crops of the valley were also unusually heavy this year. The irrigation farmers are enjoying unprecedented prosperity.

Tire Tubes and Casings Factory.

Details have been determined for the plant which the Doss Rubber & Tube Co. of Atlanta will build at Fort McPherson, Ga., and the company's president, N. C. Doss, writes to the MANUFACTURERS RECORD:

"Our factory will have a frontage of 142 feet. It will be ell shape, extend outside elevation from ell 232 feet, 55 feet wide, with between 17,000 and 18,000 square feet floor space. It will be constructed of stone and brick, one story high, but with sufficient foundation to support an additional story. The contractor is the Pittman Construction Co. of Atlanta. Mr. Zinn of the Pittman Construction Co. is the architect, and G. J. Reuter, formerly of Newark, N. J., with 21 years' experience in the rubber business, is our superintendent and designer.

"Relative to the machinery contractors, a committee of three has been selected with me as chairman for this work. According to the estimate of our superintendent, the factory when fully equipped will have a daily capacity of manufacturing 500 inner tubes and 500 casings. The probable date of completion is April 20."

The world is using more wool than ever before in history, and yet the United States in 1916 produced only 35 per cent. of what it consumed.

Official figures show that rice consumption in the United States in 1916-1917 was 17.32 lbs. per capita, 52 per cent. more than in 1914-1915, and that production in the same period increased 707,385,000 pounds, or 72 per cent.

Is the Department of Agriculture Hampering the Draining of Wet Lands and the Improvement of Cut-Over Lands?

[Special Correspondence Manufacturers Record.]

Washington, D. C., December 6.

Intimations that some of the bureaus of the Department of Agriculture, especially the Bureau of Plant Industry and the Bureau of Roads, have adopted a policy of opposition to drainage or land reclaiming of a similar character has aroused considerable interest, in view of the imperative need for greatly increased acreage of fertile soil for crop growing under present conditions.

The inclination generally has not been one of a ready acceptance of these statements. It has not seemed credible that the Agricultural Department would stand in opposition to the reclamation of swamp lands or the clearing up of cut-over timber lands at a time when there is the utmost demand for additional fertile areas for cultivation, in order to insure ample food for this nation and its soldiers, as well as for the civilian populations and fighting forces of the allied countries.

With a virtual absence of natural deposits of some of the materials essential to the manufacture of fertilizers in the United States and a present dependence almost entirely upon Chile for nitrate supplies, the reclamation of overflowed lands would seem to be clearly indicated as a wise economic measure at this time, since they will not require the application of fertilizers. Much of the cut-over timber land also would not require fertilizers for several years to anything like the extent necessary on farm lands that have been long under cultivation.

Personal inquiry by the MANUFACTURERS RECORD correspondent today brought forth statements from officials of the Department of Agriculture which are capable of being construed both as an admission and as a denial of the charges that the department is now "against" opening up either the cut-over or the overflowed lands for cultivation.

So far as the denial was concerned, it largely took the form of disclaiming responsibility for policies bearing on the matter, which properly belonged elsewhere. Extensive reclamation projects, it was pointed out, do not come under the control of the Department of Agriculture, but are looked after by other governmental agencies.

As regards the lesser projects, it was stated that the department has not recently encouraged the reclamation of cut-over or overflowed tracts unless they were closely connected with "existing farming operations." That is, a farmer would not be encouraged to devote time and money toward draining and clearing a large tract of overflowed or cut-over land in his vicinity; but he would be encouraged to drain all those parts of his farm which he had been cultivating with little success because of the excessive moisture in the soil.

It was stated that, in all States, the amount of overflowed and cut-over land that can be redeemed for cultivation is about 10,000,000 acres, while about 200,000,000 acres of land already cultivated could now be much improved through drainage. Moreover, on an average only 10 per cent. of an overflowed, cut-over district can be reclaimed each year for cultivation, whereas the yield of wet land already cultivated is often improved at once by several hundred per cent. whenever the land is properly drained.

Hence, to quote an official close to Secretary Houston, since the war needs became apparent to the Department of Agriculture the department "has favored the extension of existing farming operations as likely to produce quicker and more certain results in the way of increasing farm production."

Of cut-over land that is not overflowed little was said by the department as to the advisability of its reclamation. The most important tracts of such land were said to be confined to the far Northwest, where they are known as "logged-off" land. Some years ago Congress appropriated \$5000 annually to pay the cost of investigating and formulating methods for the cultivation of "logged-off" areas. The department made investigations and issued bulletins. At the last session, however, Congress failed to renew the appropriation, although it had been included in the Secretary's estimates.

Nearly all the overflowed prairie land outside the South, such as that in Iowa and Illinois, has now been

redeemed. Thus nearly all the overflowed land east of the Rocky Mountains except that along the Gulf coast is also cut-over land. To be cultivated, it was stated by the department that the land must first be cleared, and then drained, and that the cost of clearing ranges from \$10 to \$1000 an acre. This statement hardly agrees with others that have been made to the effect that in very many cases the timber obtained from the clearing more than offsets the cost of its removal.

Much of the overflowed and cut-over land is in the South. Florida has 19,000,000 acres; Louisiana, 9,000,000 acres; Texas, 7,000,000 acres; Georgia, 7,000,000 acres; North Carolina, 5,600,000 acres; Mississippi and Arkansas, 5,000,000 acres each. These seven States include about 58,000,000 acres of fertile soil capable of being converted into areas of rich, productive powers. Nor are the Northern States lacking in similar reclaimable territory. Especially is this true of Michigan and Minnesota, the former State having 5,000,000 acres and the latter 8,000,000 acres of overflowed and cut-over lands.

Considering Transfer of Western Sheep to South.

New Orleans, La., December 7—[Special.]—With a view to investigating possibilities of the transfer of herds of sheep from the West, a committee represent-

ing the National Wool Growers' Association is now on its way South from Salt Lake City, Utah. This committee, which is headed by J. R. Edgehill, and includes Thomas Austin, Richard Winder, Albert Smith and Dr. J. W. McClure, secretary, will reach New Orleans at noon tomorrow and immediately go into conference with lumbermen, landowners and Government experts called together by the Southern Pine Association. A number of men who are already engaged in sheep raising in the South will be present.

From New Orleans the sheep men will be taken on a tour over parts of the cut-over land territory.

Interest shown by the Westerners in the South's possibilities for sheep raising is a direct outcome of the Cut-Over Land Conference of the South held here last spring and correspondence exchanged with the Southern Pine Association since that time.

Soap from Sewer Fat.

The manufacture of soap from sewer fat has been taken up by the Happach Soap Co., which has worked out a new method for the purpose, according to Vice-Consul Arthur E. J. Reilly, Stockholm, Sweden. There are also plans for using native vegetable fats, such as beechmast, horse-chestnuts, etc. All this due to the shortage in raw materials for the soap and soft-soap industry.

SOUTHERN LUMBERMEN SPEEDING UP TIMBER PRODUCTION FOR WOODEN SHIPS.

A picturesque campaign is being carried on by the Southern Pine Association in behalf of increased timber production for wooden ships. Volunteer speakers are traveling thousands of miles through the greatest lumber district in the world, from Florida to Texas, preaching the gospel of "Ships and More Ships." Thousands of posters are displayed at mills and in the woods as a constant reminder for workmen to do their utmost in behalf of the nation's needs. Posted on trees are placards reading thus:

To Lumbermen:

For the support of our soldiers in France the Government must have wooden ships.

Without ships the war cannot be won.

Without timbers ships cannot be built.

Our country looks to you.

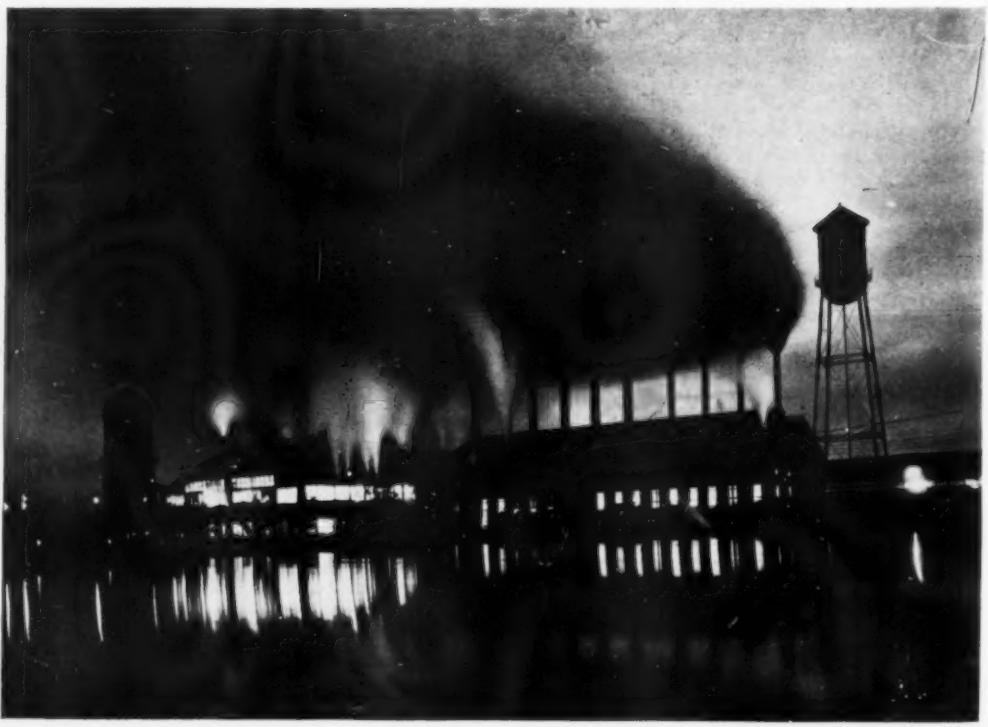
Every swing of an axe, every cut of a saw, may score as heavily as a shot fired from the trenches. Help our boys in France. Help them win the war.

Make the world safe for democracy.

SOUTHERN PINE ASSOCIATION.

From 700,000 feet of ship timbers a day which were going to shipyards the middle of November, Southern pine mills are now furnishing the Government 1,200,000 feet a day. Production is increasing rapidly, and soon it is believed the goal of 2,000,000 feet a day, which the Shipping Board set as necessary to operate all shipbuilding plants at full time, will be reached.

The accompanying illustration of a sawmill in full operation at night time indicates the extent of the effort being made to speed up production.



NIGHT SCENE AT A SOUTHERN PINE MILL. MANY PLANTS ARE NOW WORKING 24 HOURS' SHIFT FOR UNCLE SAM.

One Case Where the Nation Wastes A Great Food Opportunity

[Special Correspondence Manufacturers Record.]

Washington, D. C., December 6.

It is virtually impossible in Washington or elsewhere to meet a man who, when presented with the proposition of making every special industry subordinate to the general good in the face of war necessities, does not give immediate assent to the general principle. It is when the principle is applied to a particular industry in which he may be interested that the protest comes.

One of the problems today is the shortage of milk and the high prices consequently prevailing, which place it beyond the reach of many people who need it for the consumption of the little ones in the home. The urgency of this point has been indicated in the suggestions and advice issued by the Food Administration. While enjoining the utmost conservation consistent with good health in other respects, Mr. Hoover insisted that the milk supply for the children was to be the last thing touched, if touched at all.

Doubtless, there are reasons for a lessening of the aggregate milk supply of the nation that go back to a phase of production that cannot be adjusted offhand. Without entering into that phase or its remedy, however, various students of the situation are discussing how best to utilize the milk supply now in sight.

The placing of milk in department stores is one means of lowering the price that has been advocated. A Chicago investigator, in offering this suggestion, calls attention to the cost of distribution under present methods as adding greatly to the price. A reduction in the manner indicated seems possible. With statistics showing that since the price of milk went up in New York, on October 1, 400 babies are reported as having died as a result of being underfed, the problem is presented in all its seriousness.

Most effective of all the recommended movements, however, is that of a repeal, or at least a revision, of National and State restrictions placed upon the manufacture and sale of oleomargarine. The matter is now being talked over to no little extent in Washington, and the opinion is developing that something must be done in this way to meet the situation.

It is seen in a general way that a nation-wide campaign for the conservation of fats becomes absurd in the face of a mass of legislation which, in effect, insists on the consumption of these desirable fats in the form of butter, when a harmless and palatable substitute is readily available once the legislative restrictions are modified or removed.

Under existing law, it is pointed out that the Comptroller of New York City is compelled to waste, at the present prices of butter and oleomargarine, not less than \$40,000 a year because he is not allowed to buy oleomargarine instead of butter for municipal hospitals and other institutions under his jurisdiction. The same situation prevails elsewhere, and is not without its effect on every home. Nor does the so-called protection protect against any crying evil. Oleomargarine is made from the products of Federal-inspected slaughter-houses, and is pasteurized in the making. Much of the butter comes from untested cattle, and is largely made in uninspected dairies, many of which are known to be insanitary.

But the great immediate desideratum is the conservation for the use of infants of the milk now diverted to the manufacture of butter.

Of this phase of the situation, an authority has recently stated that one-tenth of the milk required to make 100 pounds of butter will produce 100 pounds of margarine when properly churned with food oils.

The statement by the New York Board of Health that large numbers of children in that city are dying for the want of milk is claimed by this authority to apply equally to the capital of the nation and other large cities.

All authorities agree that, owing to the war and to the ravages of tuberculosis and other diseases among dairy cattle, it will be impossible to increase the actual milk supply to any appreciable extent in the near future.

The solution, in their opinion, lies in the stopping of the wasteful methods of butter making, which is de-

scribed as an old-time process in which all the food value of the milk is lost except the fat. In expatiating on the situation and its remedy, as well as the character of the difficulties that will be met, this Washington authority says:

"Oleomargarine is now universally admitted to be just as nutritious as butter. It is cleaner and safer, because it is protected by careful Government protection.

"Why should not the creameries in or contiguous to the large centers of population conserve the milk supply by using a small amount to churn a large amount of food oil into pleasing and palatable table food and bottling a large amount of the milk for the children?

"Answer: To thus conserve the milk for the children, the creamery man would have to pay to the United States Government an annual license of \$600 and give bond for \$5000 more. He would have to pay 10 cents per pound tax on all margarine colored to please the eye, as butter is colored, and one-fourth cent per pound on all uncolored. The wholesale dealer would have to pay \$480 a year for selling colored and \$200 for selling uncolored. The retail dealer would have to pay \$48 on colored and \$30 on uncolored. Everybody in the business of producing and distributing this wholesome food must make affidavits, submit tedious reports and endure various annoyances.

"So, because Uncle Sam will not remove these restrictions, millions of gallons of skim-milk are wasted, millions of pounds of food oils go into industrial uses, the prices of milk and butter go higher and higher, and the death rate among children becomes appalling."

Industrial Development in New Orleans.

New Orleans, December 8—[Special.]—Industrial corporations with an aggregate capitalization of \$4,440,000, have been granted charters at New Orleans

within the last two weeks. This respectable showing is regarded as merely the beginning of a period of pronounced industrial development in this section.

Most prominent of the recent new New Orleans concerns is the Lakeside Livestock Co., Inc., a \$2,100,000 proposition.

The \$1,000,000 Nicaraguan Fruit & Steamship Co. filed articles of incorporation, and charter was also filed for the Mexican and Central American Exchange, Inc. Both of these concerns were organized by big Latin American products interests and have for their object the more extensive exploitation of the resources of Mexico and Central America.

Southern auto manufacturing circles will be interested in the announcement of an increase in the capital stock of the Forschler Motor Truck Manufacturing Co., Inc., to \$200,000. This follows close on the recent erection of a larger plant for this infant New Orleans industry, which is the fruit of research work along these lines by Philip Forschler, long identified with Southern wagon manufacturing. The manufacture of Forschler patented trucks was formerly carried on as a side line, but recently a company was formed to push their manufacture, and the capital increase follows the success of increased manufacture. It is the only auto factory in this part of the country.

The Gulf Products Co., Inc., was formed with a capital stock of \$200,000 to engage in the naval stores and other correlated businesses.

Sugar machinery and sugar distributing concerns also figured in the fortnight's activity.

Realty concerns made up approximately \$400,000 of the new capital invested.

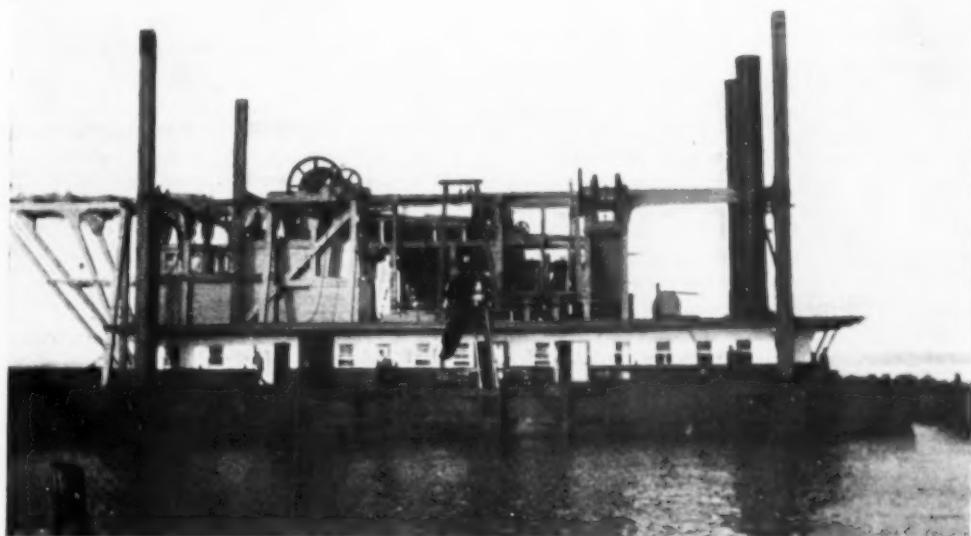
Expansion of the Louisiana fur business was indicated by an increase in the capital stock of William Voelkel Co., Inc. Although not generally known, the Louisiana fur business is of material importance.

Can't Get Along Without It.

W. L. REYNOLDS, Box 215, Asheville, N. C.

I never missed anything as I do your publication, so as I am unable to get it without subscription I would be glad that you enter my name on your mailing list at once.

MAMMOTH SAND AND GRAVEL DREDGE RECENTLY BUILT IN BALTIMORE DISTRICT.



Dredge No. 1 of the Arundel Sand & Gravel Co., Baltimore, completed recently at the plant of the Arundel Shipbuilding Co. at Fairfield, Md., is the largest sand and gravel dredge ever built. It was designed and built under the direction of Alexander Lindenbergh, superintendent. It is 120 feet by 44 feet by 13 feet. Two boilers of 300 horse-power each will operate the machinery. It will be able to dredge to a depth of 65 feet, and has buckets with a capacity of one-half ton each. They are fastened on an endless chain, and 16 buckets a minute will dump into the receiving chamber. It will grade three kinds of gravel and three kinds of sand. The dredged material first goes to the receiver, where it is screened, the sand

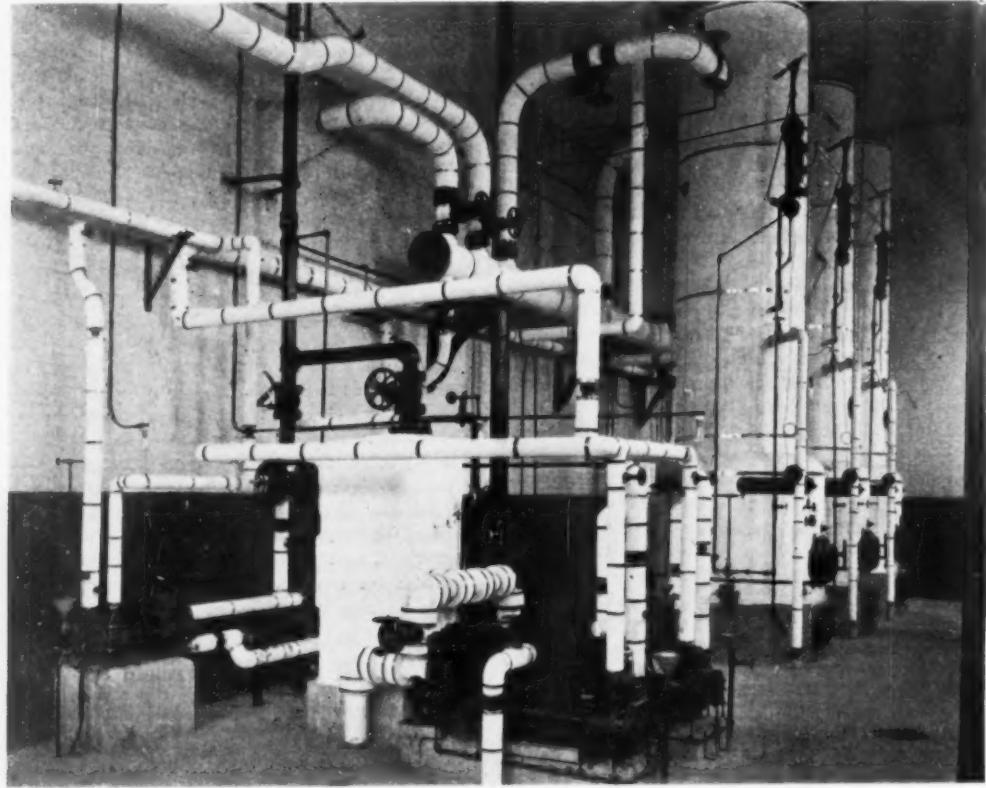
being first removed and later the gravel. The rock that remains is carried to a crusher, which is adjustable, so that any desired size gravel may be obtained from the rock. From here it is returned to a washer, where all the sand is removed, so that there is no loss whatsoever. All the machinery is placed in the hold, and is operated from an elevated lever-room in the front of the dredge. In the rear are the engine-room, tool shop, machine shop, electric and ice plants, kitchen, storage-room. In the front are the dining-room and six sleeping-rooms, three on a side. Each sleeping-room accommodates three men, providing for a total crew of 18. The dining-room is 32x40 feet. All machinery and equipment for the dredge was also made at the plant

DURHAM'S NEW MUNICIPALLY-OWNED WATER-WORKS.

Second in Cost in North Carolina—Features of Construction and Appointments.

By S. R. WINTERS, Durham, N. C.

The city of Durham, N. C., has completed a \$791,000 water-works plant, and the municipally-owned enterprise has been formally accepted by the Board of Aldermen. The capacity of the reservoir is 46,000,000 gallons.



NEW MUNICIPALLY-OWNED WATER-WORKS PLANT, DURHAM, N. C.—INTERIOR VIEW.

lons of water. Modern in construction and sanitary in its appointments, the plant has been described by Warren H. Booker of the North Carolina Board of Health as "a most complete and modern, and, as far as I can see, a more nearly foolproof plant than any in the State."

The river station is situated 11 miles from Durham, and is connected with the city station by a 20-inch pipe line. The watershed extends along Flat River for 150 square miles. The building at the river is constructed altogether of brick and concrete, the sheathing on the roof being the only wood employed in the construction.

The plant at the river has a capacity of transmitting over the 11-mile pipe line 8,000,000 gallons of water daily. The supply is drafted from the river by two steam pumps, driven by independent steam turbines. Durham consumes about 3,000,000 gallons of water daily, its varied manufacturing industries using liberal supplies.

The 20-inch pipe line conveys the supply into a raw-water reservoir two miles from the center of the city. This reservoir has a capacity of 46,000,000 gallons, and cost \$59,000. As the supply comes from the reservoir it passes through the mixing chamber, where it receives a healthy dose of chemicals. It is then transmitted to the concrete coagulating or settling basin, where it is given an opportunity to subside and divest itself of its heaviest impurities.

From the settling basin the water drifts into the filtering units, where final purification is insured. From the filters the supply drops into a concrete suction well having a capacity of 350,000 gallons. This suction well is located immediately beneath the filtering units. The purified water is then pumped into the city distribution system. The surplus over and above the needs of the city goes to a diminutive reservoir three miles beyond the pumping plant. This reservoir has a capacity of 3,000,000 gallons, and 65 pounds of pressure. The equipment was utilized from the old water-works system.

The two-unit water-works system is equipped with all the safety and measuring devices, namely, automatic

boiler stop valves, boiler feed regulators, fire protection and Venturi recording meters. All the steam pipes and boilers are covered with magnesium covering, thus affording comfortable quarters in the boiler-room during the summer months. The Delaval steam turbines in the pumping-room make 6000 revolutions a minute and the pump makes 1400 revolutions.

The intake at the river bank consists of a 30-inch vitrified pipe, encased in concrete. This pipe leads to a suction well at the building 50 feet away from the river. Here the water is taken from the suction well by two

steam turbines driven by centrifugal pumps. Steam is obtained from two 150-horse-power Manning type vertical boilers furnished by the D. M. Dillon Steam Boiler Works. Immediately at the boilers there is a coal pocket of concrete with a capacity for 15 carloads of coal. The city has seven acres of land surrounding the river station.

The distinctive thing about the Durham water-works, and one not common to other systems in this State, is the storage reservoir on the edge of the city with a capacity of 46,000,000 gallons. This has a twofold advantage: It gives 50 per cent. purification through sedimentation and bacterial action, and the city has a large volume of water accessible in the event of destructive fire emergencies. This reservoir is always full, and the supply would not be exhausted within two weeks should the river plant be put out of commission.

With the exception of the Charlotte water-works, the Durham plant is the most expensive in North Carolina. It was planned by Gilbert C. White, as consulting engineer, and W. C. Olson, as resident engineer. With the decision of Durham to come into the fold of municipally-owned water-works, only four towns in the State are now operated by private capital—Oxford, Elizabeth City, Graham and Hamlet.

Aggregate in Concrete.

Since the publication in the MANUFACTURERS RECORD of October 25 of the results of the test made by the Pittsburgh Testing Laboratory on blast-furnace slag, stone and gravel as coarse aggregate in concrete for 14, 30, 60 and 180-day periods, the one-year test results have become available. In reporting on these, the Pittsburgh Testing Laboratory states that "in most cases the specimens show a considerable increase in strength over those tested at the age of 180 days, but in some cases the increase is very slight. Discussion of these tests will be withheld until the end of the two or three-year tests, but the discussion of results furnished with the 180-day tests still holds true for these tests. In some instances, as will be noted, an exceptionally high compressive strength has been developed at the age of one year."

The following table gives the one-year test figures:

RESULTS OF PHYSICAL TESTS OF SLAG, STONE AND GRAVEL USED IN CONCRETE.
AGE OF TEST ONE YEAR.

P. T. L. Laboratory Number.	Name of Material Used.	Mark on cylinder.	Weight of cylinder, Lbs. Oz.	Crushing strength in lbs. per sq. in.	Average.
87410	Slag— Cleveland Macadam Co., Central Furnace, Cleveland, O.	2 16 7	62 62 62	4 4,300 4,774 4,420	4,498
87420	Slag— Duquesne Slag Products Co., Duquesne, Pa.	21 5 8	65 64 65	4,824 4,544 4,508	4,725
87430	Slag— Carnegie Steel Co., Youngstown, O.	1 5 11	65 65 65	5,092 5,148 4,844	5,028
87440	Slag— Northwestern Iron Co., Mayville, Wis.	14 8 10	62 62 62	4,928 4,556 5,172	4,885
87450	Slag— Standard Slag Co., Sharpsville, Pa.	6 19 17	65 64 65	5,397 5,660 5,108	5,388
87460	Gravel— Allegheny River, Pittsburgh, Pa.	14 11 20	69 69 69	4,556 4,664 4,660	4,627
87470	Slag— Cleveland Macadam Co., Cleveland Furnace, Cleveland, O.	8 25 4	62 61 62	5,152 4,872 4,844	4,956
87480	Slag— Birmingham Slag Co., Ensley, Ala.	15 12 14	66 66 65	5,388 4,748 5,180	5,105
87490	Trap Rock— Birdsboro, Pa.	4 26 14	72 73 73	4,888 4,666 5,296	4,950
87500	Gravel— Akron, O.	5 9 10	67 66 67	3,790 3,710 3,520	3,673
87510	Crushed Granite— Stockbridge, Ga.	6 10 24	69 68 69	4,740 4,422 4,738	4,633
87520	Slag— Duquesne Slag Products Co., Pottstown, Pa.	18 10 9	63 63 63	4,620 4,576 4,750	4,649
87530	Slag— France Slag Co., East Toledo, O.	5 X 4	66 67 65	4,972 4,794 4,596	4,787
87540	Limestone— Gates City, Ala.	3 1 6	70 69 70	4,340 4,344 4,348	4,344
87550	Dolomitic Limestone— Kellys Island, Cleveland, O.	12 25 20	69 69 69	5,030 4,874 4,898	4,904

NOTE.—Compression tests made, using 8x16 cylinders; 1² mix Alpha cement, selected by lot; Ohio River sand; large aggregate as above.

"Don't worry about me, mother dear. I shall be doing my duty, and nothing else matters."—Extract from a letter of Lieut. Clifford Wells of Montreal to his mother.

"From Montreal to Vimy Ridge and Beyond; the Story of a Youthful Doctor of Philosophy Killed in Action," contains in book form* the correspondence of Lieut. Clifford Almon Wells, B. A., of the Eighth Battalion Canadians, B. E. F., covering the period November, 1915, to April, 1917. Here are given the intimate family letters of a soldier, most of them written to his mother. They carry the reader from the time of enlistment to the victories of Vimy, vividly revealing the varying scenes of embarkation, the voyage across, the training camp, the soldier's life at the front and occasional furlough visits to Paris and London; the promotion from the ranks to first lieutenant, on merit, as noted with gratification; ceasing with a letter of April 20 date, in which are related some of the experiences of himself and his men who went over the top at Vimy, when "the greatest victory of the war was gained, and I had a small part in it." Eight days later Lieutenant Wells was killed in action, and the last of his letters in the book is an infinitely tender message of farewell to his mother; written some weeks before and sent to a brother to be handed her in case of death.

The letters are published as written, for it was felt that to "cut out personal allusions, and the expression of opinion and criticisms which later might have been modified, would have been to rob them of their piquancy and human quality." Entertaining and enlightening, covering a surprising variety of topics, they are no less notable for the spirit that they breathe. "No son can read these letters without finding in them a call to nobility of character and heroism of spirit; and no mother can read them without realizing that such letters could be written only to a mother who represented the highest type of patriotic and Christian womanhood."

Thus comments the editor, Dr. O. C. S. Wallace, who was the stepfather of Lieutenant Wells. In the death of Clifford Wells, there came to many readers of the MANUFACTURERS RECORD, a sense of personal loss in addition to the sorrow and regret felt by all in the death in battle of one so young and so brave. Dr. Wallace and his family lived in Baltimore for several years, and as pastor of the First Baptist Church here and the author of numerous religious works, he was well known through the South. Clifford Wells, the son of Mrs. Wallace by a former marriage, was a graduate of Johns Hopkins University, and in 1915, at the end of one year of graduate study in preparation for the

degree of doctor of philosophy, he was awarded a fellowship. A native of Canada, he decided during the summer of 1915 that it was his duty to take part in the European war. Relinquishing his fellowship he abandoned his studies and in September enlisted in Montreal as a private in the Fourth University Company, one of the reinforcing companies of the "Princess Pat." In November he was made a platoon sergeant, and January 28, 1916, received a commission as lieutenant. Later he was transferred to the Eighth Canadian Battalion, with which he served until his death, shortly after he had entered his 26th year.

In one of Lieutenant Wells' letters to his mother is found the sentence: "Don't worry about me, Mother dear. I shall be doing my duty, and nothing else matters." This voices a supreme sense of duty, and it is this sense of duty which must animate the men and women of America as we enter into the great struggle. "Duty," said Gen. Robert E. Lee, "is the noblest word in the English language." Lieutenant Wells expressed the thought of duty in another way, but with equal force, when in this letter to his mother he said "I shall be doing my duty, and nothing else matters." Active in church work, active and vigorous as a student in the Johns Hopkins University and as a member of one of its fraternities, Lieutenant Wells has left behind him an enduring monument of devotion to duty regardless of the risk to life. Deliberately, with a full realization of what it meant to give up his university plans and his career, he put it all aside, and when Canada called for volunteers he promptly enlisted. The sense of duty in him, which enabled him to write that nothing else mattered except duty, must be developed to its fullest extent in the people of this country, and in publishing the family letters of Lieutenant Wells, Dr. Wallace has rendered a service to this country as well as to Canada. In publications of this kind which throw a flood of light upon what the soldiers are thinking and doing are to be found the most illuminating facts which bear upon the war and upon the spirit of the men who sacrifice that they may serve.

*From Montreal to Vimy Ridge and Beyond; the Story of a Youthful Doctor of Philosophy Killed in Action. The Correspondence of Lieut. Clifford Almon Wells, B.A., of the Eighth Battalion Canadians, B.E.F., November, 1915-April, 1917. Edited by O. C. S. Wallace, D.D., LL.D., pastor of the Baptist Church at Westmount, District of Montreal, Canada.

George H. Doran Company, publishers, New York. 321 pages. \$1.35 net.

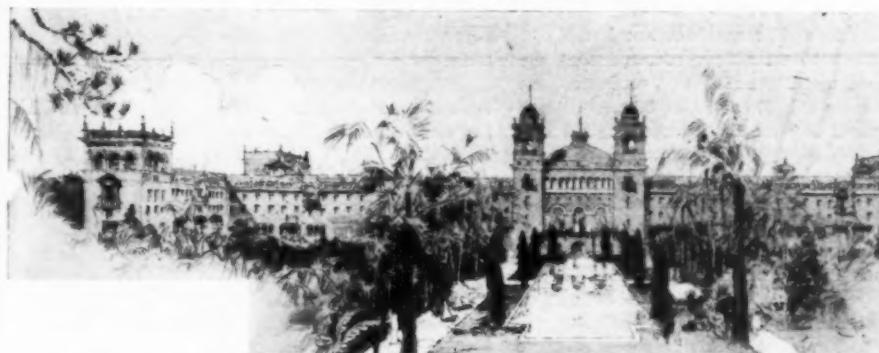
Endorses Work to Awaken America to Facts of the War.

GEO. S. MALAIE, Hampton Cotton Mills, Hampton, Ga.

Your articles on Germany and their spy system have caused the sending of my subscription. Wish to compliment you on the noble work you are doing to awaken

the red-blooded Americans to the fact that we are now at war with the most inhuman beings God ever permitted to live upon this earth. Cannot but believe right will prevail in the end, but it is true that America will have to sacrifice a lot of good men before the German aristocracy will be thoroughly awakened to the fact that we do mean business and are going to crush for all time to come the Hohenzollern tyranny.

CASA GRANDE HOTEL AT MIAMI BEACH, FLORIDA.



The Casa Grande Hotel will be erected on a 106-acre site on the beach front at Miami Beach, Fla., by the Casa Grande Hotel Co., Cleveland, Ohio, in which Burrows & Berlekmpe Corporations Co., also of Cleveland, is interested. Plans as prepared by Howell & Thompson, Cleveland, call for a 300-room stucco building of fireproof construction, with tile exposed and com-

position unexposed roof decking. The floors will be of concrete and Mosaic tile. The building will be equipped throughout with steam heat and electric lights. There will also be a complement of six passenger and three freight elevators. The building, complete, will cost approximately \$750,000. It is planned to begin construction by March 1, 1918, with anticipated completion by January 1, 1919.

People Must Realize That We Are in the World's Greatest War.

D. C. EARNEST, Dallas, Tex.

It affords me great pleasure to state that the very best editorials concerning the war are in the MANUFACTURERS RECORD. If the great daily newspapers would try half as hard as the MANUFACTURERS RECORD to make the people realize that we are in the greatest war in the history of the world, perhaps more people would realize just what war means.

Enclosed find \$1, for which please send me 10 copies of your recent editorials in pamphlet form.

Germany Civilization's Common Enemy.

S. F. PATTERSON, Treasurer Roanoke Mills Co., Roanoke Rapids, N. C.

Enclosed herewith you will find our check for \$8, for which please send us immediately 200 copies of Dr. Hillis' lecture, "Germany's War Plans and Her Atrocities in Belgium and France."

At the same time, please accept our thanks as American citizens for the way in which you are bringing before the public the facts as to why we are at war with civilization's common enemy, the Germans.

Germany the Great Murderer.

EUGENE C. CALLAWAY, Atlanta, Ga.

I do not think anything truer has been said about the war than your editorial of November 29, in which the following statement was made in regard to the German propaganda:

"It was conceived in murder, it was born in murder, and every soldier who dies on the battlefields in defense of civilization has been murdered in exactly the same way that a man who undertakes to defend his home from the midnight robber and outrager and is killed in doing so, is murdered."

Every development of the unholy war made by the Germans on civilization demonstrates the truth of what you have to say in the above quotation.

General Eye-Opening to Magnitude of Our War Task Great Need of the Times.

H. H. COOMBS, Vice-President Ramsey-Wheeler Company, Bainbridge, Ga.

Enclosed is statement and our check to cover renewal.

We highly value your publication from a business standpoint, and are very much interested in your weekly articles relative to the heretofore inconceivable depths of German depravity and barbarism. These articles have undoubtedly opened many eyes to an understanding of our imminent danger, and among many other things that we need at the present time, a general "eye-opening" to the magnitude of our task is one of the greatest.

Unethical Practices Condemned.

At the recent convention of the Associated Business Papers, Inc., held at Chicago, the following preamble and resolutions were adopted. A copy has been furnished each member of the association for publication:

"Whereas, certain associations of business men permit the name and influence of their associations to be used in the solicitation of advertising for their association publications in a manner that frequently is highly objectionable; therefore, be it

"Resolved, That the Associated Business Papers, Inc., do hereby condemn such solicitations as an undignified and improper perversion of association influence, far removed from the original purpose of any business organization, and equally removed from the methods that should govern the sale of legitimate advertising."

Bakery and Candy Machinery.

FELIPE POZUELO & SONS, San Jose, Costa Rica.

I desire information in regard to machinery for making ship biscuit, hardtack, crackers, biscuits, etc.; also for making candy, as well as accessories and supplies.

The Iron, Steel and Metal Trades

PRESENT IRON AND STEEL PRICES TO STAND.

Considered Almost Certain That No Reductions Will Be Made by War Industries Board.

[Special Dispatch to Manufacturers Record.]

Washington, D. C., December 11.

On excellent authority it was just learned that the Government will allow present schedules of iron and steel prices to be reaffirmed. It is almost certain that no reductions will be made.

Operators Confer With War Industries Board as to Continuance of Present Prices for Iron and Steel.

Washington, D. C., December 11—[Special.]—Southern iron and steel men, together with operators of the big steel companies of Pennsylvania, appeared today before the War Industries Board of the Council of National Defense as against the lowering of steel prices by the Government.

Prices for all grades of steel were fixed about two months ago through the War Industries Board, with the understanding that the figures would be subject to review before January 1. The possibility that the Government might revise these prices downward caused the operators of the country to appear here today. They pointed out that the present charges were fair, and that any lowering would effect production and might seriously impair the war industries' output.

The Federal Trade Commission is now making an investigation of the cost of production in the steel industry, and, it is expected, will submit its report to the War Industries Board in the near future.

One favorable development for the steel industry occurred as a result of the conference today, when the War Industries Board decided upon turning over the allocating of orders to J. L. Replogle, a former steel magnate, who is giving his services to the Government for the period of the war. Steel men believe that the placing of this duty in expert hands will result in equitable treatment.

At a meeting to be held on December 14 the steel men of the South and North will meet the members of the Federal Trade Commission and will present statistics of production cost to show that reduction would be detrimental to the industry as a whole.

Additional Furnaces Put in Blast at Birmingham—Soil Pipe Plant Shuts Down.

[Special Dispatch to Manufacturers Record.]

Birmingham, Ala., December 11.

All three of the Republic Iron & Steel Co.'s furnaces at Thomas are again in blast. The Sloss-Sheffield Steel & Iron Co.'s new furnace at Sheffield is finished and will be started up at the end of the week.

The Bessemer soil-pipe plant has been shut down indefinitely. Three hundred men were let out. Lack of business on account of slack building operations is given as the cause.

MORE ORDERS THAN IRON.

How America Has Swung from Peace to War Activities.

The Matthew Addy Company's Market Report on December 8 says:

"The American Warrant Co. has cancelled its last warrant calling for iron in store on furnace yards. This means that the reserve stock of iron piled for a rainy day has been exhausted and the country is now dependent for the iron it uses on the day by day output of the furnaces. It is a serious situation, for never was there such an absolute need of iron. And the worst of it is that there is no remedy. We have no other way now of providing for the enormously increased uses of iron than by speeding up the furnaces to their utmost

capacity. This is easily said. But saying and doing are two different things. And instead of speeding up, the furnaces have been compelled to slow down. This because of the transportation, labor and coke shortages. There is no prospect of an early termination of these troubles. On the contrary, the winter weather will probably intensify them.

"In some quarters there is grumbling over the hard conditions which war has laid upon us. But where there is one grumbler who cannot see why business should not go on as usual, there are a hundred loyal patriotic, broad-gauged, clear-eyed ironmasters who are sacrificing everything to be of assistance in the great national crisis. And it is a wonderful spectacle to see America all at once divert its energies away from the long-accustomed arts of peace to those of war, and to behold the iron trade, reversing the dream of the Prophet Isaiah, beating its plowshares into swords and its pruning hooks into spears. It is hard to realize this has to be done, but we are doing it.

"But there are some funny things. We have a customer who makes stoves. The other day a soldier walked into his place and asked how many stoves he had on hand, and when the number was given the soldier said he would take them all. The stove maker said that was impossible, as all the stoves were already billed to customers, and furthermore, he was behind on his orders. The soldier simply remarked that he had said he would take them, and forthwith army trucks appeared and the stoves disappeared. The customers of the stove man had to wait—that was all. The army must be served first.

"And this story is typical in a small way of what is happening every day in the iron trade. All its energies are being directed to help win the war; and let no one forget it—every weapon in the hands of our boys at the front is made from the ore that the ironmasters smelt into pig-iron and refine into steel. Current business is limited only by the amount of iron available for sale. Coke seems to be a little better, but that situation is nearly hopeless. The railroads are only hauling iron needed for Government orders. Of course, Government prices rule."

SCARCITY OF IRON AND STEEL.

Stagnant Iron and Steel Markets Caused by Lack of Materials—Tinplate Production Stimulated—Export Traffic to Be Controlled.

New York, December 10—[Special.]—The transportation situation did not improve during the past week, and the iron and steel markets labored under a restriction of production, which brought about practically stagnant conditions. Furnace bankings were common in the Central West, and merchant pig-iron was unobtainable. Taking the country as a whole, the rate of steel ingot production in the past two weeks has been under 40,000,000 tons a year, as compared with a capacity of nearly, if not quite, 50,000,000 tons.

Steel plants and iron founders having contracts for forgings and rolled steel from the United States Government to be used in the manufacture of war munitions placed additional contracts during the week for plant extensions calling for 6000 tons of fabricated steel.

The steel mills reported a heavy demand from domestic consumers, notwithstanding that producers have already sold between 750,000 and 1,000,000 tons of black sheets for shipment over the first quarter and the first half of 1918.

The scarcity of sheet bars is reported to be cutting down the output of black sheets. It is estimated that the mills are now running 70 per cent. of capacity. Last year the sheet mills produced 2,350,000 tons of black sheets and 1,525,000 tons of sheets for tinplate making. This year production of all kinds of sheets is estimated at about 4,000,000 tons, but probably not more than 2,300,000 tons of black sheets were available for sale in the open market.

Tinplate manufacturers are making strenuous efforts to maintain output at approximately 95 per cent. of capacity, notwithstanding the scarcity of coke and steel and poor transportation facilities.

Control of the entire export traffic of the Eastern railroads of the United States in the manufactured

forms of iron and steel, including billets, bars, plates, scrap and pig-iron (except for the Government) was placed last week, as a war emergency measure, in the hands of the newly-appointed committee of seven railroad officers, representing the Atlantic ports from Boston, Mass., to Norfolk, Va. Headquarters of the committee will be permanently located in the City Investing Building, 165 Broadway, New York, adjoining the offices occupied by the representatives of the Entente Allies, who are in charge of the purchase and transportation of munitions from this country. The first duty of the committee will be to administer the general embargo on export iron and steel, billets, bars, plates, scrap and pig-iron, which all Eastern railroads have just been ordered to place in effect at once by the General Operating Committee at Pittsburgh. Assumption of jurisdiction over the other forms of export traffic will follow.

Inquiry during the past week as to the paternity of the steel hoop price of 3½ cents has not developed specific information. The 3½-cent price is, however, well established in the trade, the leading hoop producers stating that they are quoting it and no other.

One Buffalo furnace interest, that has been selling pig-iron for shipment over the first of July next year, is reported to have sold a tonnage equal to the entire output of the furnaces for the third quarter, estimated at about 50,000 tons. Another Buffalo furnace is said to have sold about half this tonnage. One of these interests has now suspended sales for shipment during the first six months of next year.

There was an active inquiry last week for small lots of foundry iron for shipment over the first half of next year, and, although furnaces are generally well sold, some additional orders, aggregating about 6000 tons, have been taken within the past few days for shipment during the first half of 1918. The bulk of this business was taken by Eastern Pennsylvania furnaces, but there was also a number of small sales of high phosphorus Alabama iron and various small lots of off grades of both Northern and Virginia iron sold.

METAL CONDITIONS MORE SATISFACTION.

Copper Market Works More Smoothly—Lead and Spelter Still Quiet—Tin Firm.

New York, December 10—[Special.]—The metal markets appeared to be in a more satisfactory condition during the past week than they have been for some time. There was a better inquiry from both retail and jobbing sources, and both consumers and producers were apparently less uneasy as to future conditions than heretofore. With such an upheaval in the metal markets as was produced by the recent Federal price-fixing, it was only natural that the metal markets would be disturbed and unsettled for some time thereafter. Now that panicky symptoms are apparently passing away, more stable conditions may be looked for.

The copper market appears to be working smoothly, including the retail jobbing business, and the developments of the past week have been very satisfactory, especially to smaller buyers, who are now finding no difficulty in securing their requirements from jobbers in retail lots of electrolytic and casting copper at 5 per cent. over the fixed price of 23½ cents a pound, namely, 24.67½ cents. All contracts now drawn for January and later deliveries are subject to Government revision in price, and in consequence there is nothing to retard buyers from placing their orders for future business, and undoubtedly they are continuing to buy freely. There is every indication that there will be enough copper obtainable for the demands over the next six months, unless Government and Allied requirements exceed present expectations, as there is a falling off in consumption in general business outside of those industries affected by the war demand.

The Government price on lead is expected to be announced within the next fortnight, and to take the form of a maximum quotation, which would prevent sales from being made above the maximum, but would not interfere with sellers accepting lower prices if they so desired. As it is almost impossible to anticipate future supply and demand, the establishment of a minimum or a fixed price is considered impracticable. Business remained dull this week, but many of the producers are supplied with orders for December and January delivery. Prices in the open market, therefore, remain slightly above that of 6.25 cents by the leading interest.

Smelters who derive their zinc ore supplies from the

Joplin securing market expected by the that is their at a st for spe 7.92½ 8.12½ The cents f No Ba ported shipme to be v of tin Compa

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Joplin district complain of having great difficulty in securing cars in which to ship the ore. The spelter market remains unchanged, but each day the trade is expecting to hear what arrangements have been made by the Government to control prices, and as soon as that is known the producers will set about to regulate their business accordingly. The market is practically at a standstill, with sellers quoting 7.80 to 7.92½ cents for spot delivery, 7.87½ to 7.92½ cents for January, 7.92½ to 8.02½ cents for February, and 8.02½ to 8.12½ cents for March.

The tin market was firm during the past week at 85 cents for spot Straits and 79 cents for 99 per cent. tin. No Banca tin was offered or quoted. There was reported to be some buying interest on tin for prompt shipment from England, subject to permit, but it seems to be very difficult to get any orders. The visible supply of tin for the month of November increased 1156 tons. Compared with a year ago, there is a decrease of 2003 tons.

Iron and Steel Conditions at Birmingham.

Birmingham, Ala., December 10—[Special.]—Practically all of the probable make of the first half of the coming year has been sold, and yet there are inquiries for pig-iron being received by Southern producers, with daily sales, in small lots, being noted. There is a general denial that business beyond July 1 has been accepted to any extent, though it is admitted that many inquiries are in hand and there is an anxiety on the part of the purchasers to get their orders filled. The make in the Southern territory is still depressed, three furnaces being out of commission, one for repairs and two because of a coke shortage. There has been some further off-grade production of iron recently, but inasmuch as there is a demand for any and all irons, the off-grade iron is not a loss total by any means. Statistics in hand indicate that the iron production in Alabama for the first 11 months approaches 2,664,568 tons. The iron production, official, in 1916 went to 2,762,885 tons.

Raw material supplies are far from being satisfactory. Labor at ore and coal mines, at the quarries and coke ovens is being admonished to remain steadily at work during the holiday period, urgent demand for iron calling for full production where possible.

Sales of iron in the Southern territory are at the Government schedule, consumers in the home territory receiving no concessions.

Cast-iron pipe plants in the South are melting iron steadily, though the pipe market is still lagging. Some Government contracts are being filled in this district.

Car shortage is being felt. Embargoes in Pennsylvania are having effect in the Southern territory.

Steel mill operations are still active in the South, and shipment of products is steady. Government contracts predominate with the steel producers.

Famine in pig-iron in Pennsylvania and some of the Western sections has brought about a lively inquiry as to scrap iron and steel in the Southern market. Prompt shipments, within 10 days, being asked for indicates that there is something brewing in the old-material market, and some of the dealers here are figuring on something likely to drop soon, either a recession of the market or a general depression. Scarcity of cars is working a hardship on old-material dealers in the South. The American Board of Scrap Iron Dealers at Pittsburgh has been appealed to urge Judge Lovett to issue blanket instructions in the Southeast as to raw material transportation, and a favorable reply is looked for this week. It is believed that the scarcity of scrap will be of the past when it becomes a fact that there can be some handling of the product. Inquiries from the East and West are nearer Government figures than ever before, but home consumers maintain a reasonable distance. Several changes were noted in the quotations of old material during the past week.

Quotations for pig-iron and old material are as follows in the South:

PIG-IRON.

No. 2 foundry or No. 2X Pittsburgh..... \$33.00
(Same differentials on other grades as existed before the Government schedule was announced.)

OLD MATERIAL.

Old steel axles.....	\$32.00 to \$33.00
Old steel rails.....	28.00 to 30.00
Heavy melting steel.....	21.50 to 22.50
No. 1 wrought.....	23.00 to 25.00
No. 1 cast.....	23.50 to 25.00
Stove plate.....	18.00 to 19.50
Old car wheels.....	25.00 to 30.00
Tram-car wheels.....	20.00 to 25.00
Machine-shop turnings.....	17.00 to 18.00
Cast-iron borings.....	13.00 to 16.00

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

DOUBLE TRACK TO BE FOUR TRACK.

Pennsylvania Railroad Will Duplicate and Parallel Its Philadelphia-Washington Line.

The Pennsylvania Railroad Co. has decided to have a four-tracked line from Philadelphia to Baltimore and Washington, 135.2 miles, and the completion of this plan will give the system four tracks all the way from New York to the National Capital, for the New York division already has four tracks. The money for the proposed improvement has been appropriated by the company, and the work is to be accomplished as soon as men and materials can be obtained. Both labor and material market conditions are unsettled, and may occasion delay, but the work is to be pushed.

The company has built four tracks from Philadelphia southward as far as Wilmington, Del., 26.7 miles, so that there are 108.5 miles from Wilmington to Washington remaining for completion. That part of the work now finished was done by working day and night shifts, and it was especially pushed to accommodate travel to and from the big shipbuilding plants on the Delaware River between Philadelphia and Wilmington, as well as other traffic. The Maryland Division, as it is called, is one of the very busiest as concerns passenger business on the entire Pennsylvania system. Besides carrying all of the great volume of travel between New York and Washington, it also carries all of the travel between the South and the Eastern States. Thus it has become a necessity that the division should be four-tracked throughout.

There are three important river crossings to be handled by the engineers in the proposed work. First of these south of Wilmington is the Susquehanna River; then comes Bush River, and finally Gunpowder River. Each of these is now spanned by a large double-tracked steel and concrete viaduct, and these structures will have to be duplicated to make a complete four-track line, just as the tunnels in Baltimore would likewise have to be duplicated and paralleled. It is probable that the company will not delay the four-track work to await settlement of the bridge and the tunnel problems, but that it will proceed as soon as the labor and materials are assured to execute its liberal plan to double the carrying capacity of this important link in its great system.

AN ECHO OF THE LITTLE KANAWHA DEAL.

Baltimore & Ohio System Acquires Small Railroad in West Virginia.

It is learned from good authority that the Baltimore & Ohio Railroad has purchased the interests of the Pennsylvania Railroad and the New York Central Lines in the Little Kanawha Railroad and the Parkersburg Bridge & Terminal Co.

The property purchased is that which a number of years ago was secured by the Gould interests about the time that the Wabash road was built into Pittsburgh, and it has been under the control of the Baltimore & Ohio since a pooling of the interests of the three roads was accomplished for that purpose.

The original intention was for the Wabash to come to the Ohio River at Parkersburg and going through to connect with the Western Maryland Railroad at its terminal at Elkins.

Thirty thousand acres of coal land are included in the deal, which tract was owned by the Little Kanawha Syndicate, of which George J. Gould and Joseph E. Ramsay were the principal stockholders.

The Baltimore & Ohio Railroad has been operating the Little Kanawha Railroad ever since the purchase from the Gould-Ramsay Syndicate, and about a year ago arranged for trackage over the bridge of the Traction Company at Parkersburg, and by the construction of additional tracks gave the Little Kanawha a direct entrance to the Baltimore & Ohio terminals in that

city, doing away with the old ferry which formerly afforded the only connection.

The Little Kanawha Railroad is 30 miles long from Parkersburg to Owingsport, W. Va.

TO SHORTEN BAY TRANSFER

New York, Philadelphia & Norfolk Railroad Buys Land Near Ocean View, Va.

The New York, Philadelphia & Norfolk Railroad Co. has recently acquired some property in the neighborhood of Little Creek, a point on Chesapeake Bay, not far from Norfolk, Va., which may ultimately be used for shortening the water route of the line across the bay to and from Cape Charles. No definite plans for the improvement have yet been made, according to a statement from the company.

A report from Norfolk says that the tract contains 500 acres, of which 100 acres front on the bay and the remainder on the south side of Little Creek, extending nearly to Diamond Spring Station. It is near East Ocean View. The water frontage of the property is about 3000 feet. Ocean View is on a peninsula immediately north of Norfolk, Willoughby Beach being at the extreme point thereof.

This contemplated improvement would materially reduce the length of the railroad company's barge transfer line between Port Norfolk and Cape Charles, but, according to local reports, it is not probable that there will be any early steps taken toward construction of either the projected terminal or of tracks to connect it with Norfolk, on account of business conditions hampering new railroad work.

NOVEL DEVELOPMENT PLAN.

Missouri, Kansas & Texas Railway Offers Personal Service to Towns and Cities.

The Missouri, Kansas & Texas Railway has adopted through its industrial department, R. W. Hockaday, industrial commissioner, a personal service plan which it offers to towns and cities along its lines, by means of which they may present their merits to the attention of manufacturers and others who contemplate locating on this system. It has caused these different places to begin preparing surveys of their resources and opportunities which may be brought to the attention of manufacturing investors who show an increasing disposition to take advantage of the cheap gas and coal of Oklahoma and of increasing markets of Texas. The extensive agricultural advantages of Oklahoma, demonstrated in recent bumper crops, will also be placed before farmers who contemplate new locations. Five new industrial agents have been appointed to place all this information where it will do the most good. Their names and locations are as follows: L. B. Chipley, territory of New England, with headquarters at Boston; C. E. Osborne, the central East, with headquarters at Pittsburgh; L. E. O'Leary, the Ohio Valley, with headquarters at Cleveland; A. Bryant, the central West, with headquarters at Chicago; C. L. Knox, Western territory, with headquarters at Omaha.

This plan will be of particular advantage to small towns which are financially unable to maintain a publicity service to present their claims to intending settlers, manufacturers and others, and its novelty and practicability are impressive.

BIG TRAINS WITHDRAWN.

Pennsylvania Railroad Makes Important Change in Service to the South.

It is announced that the Pennsylvania Railroad, beginning December 17, will make important changes in its passenger-train service between New York and points in the South as a consequence of the pressure of war traffic upon its facilities. Two big trains, the Florida Limited and the Florida Special, will be withdrawn, and all sleeping cars now being carried on daytime trains between New York and Washington will be dropped. A train now leaving New York at 11 A. M. will be withdrawn. Northward trains leaving Washington at 7.30, 9.05 and 11.45 A. M. will be

dropped. Sleeping cars will be run on trains leaving New York at 9:30 P. M. and 12:30 A. M. (midnight). Each will carry four sleepers, which will be attached at Washington to through sleeping-car trains from that city to the South. It is estimated that these changes will save 1800 passenger-train miles per day between New York and Washington, and, including train withdrawals on the main line previously announced, will make a total saving on the Pennsylvania system east of about 3000 passenger-train miles a day.

Suing Railroads for Back Taxes.

Jackson, Miss., December 10—[Special.]—The first of a series of suits for back taxes, involving more than a million dollars has been filed in the Hinds County Circuit Court by Stokes V. Robertson, State revenue agent, against the Rock Island, the Illinois Central and the Alabama & Vicksburg railroads. He seeks to hold the lines liable for a 3 per cent. gross income tax on freight cars, under chapter 118 of the laws of 1912, and asks for back payments for five years. More than 100 of these suits will be filed. If the state wins, the roads must pay 3 per cent. of their gross earnings on business beginning and ending in this state.

New Equipment.

Monongahela Valley Traction Co., Fairmont, W. Va., is receiving 12 new cars from the Jewett Car Co., Newark, O., four of them being large, for interurban service, while the others are light double-truck cars for city service in Clarksburg and for the Wolf Summit line.

Motor Fuel Co., Sapulpa, Okla., is reported about to purchase 10 tank cars of 8000 gallons capacity.

Official Changes.

H. R. Warnock, superintendent of motive power of the Western Maryland Railway at Hagerstown, Md., has resigned to accept a similar position with the Chicago, Milwaukee & St. Paul Railway.

C. H. Guion has been appointed commercial agent of the Missouri, Kansas & Texas Railway at Galveston, succeeding C. P. Norman, resigned.

Property Extension Notes to Be Issued.

The Virginia Railway & Power Co., Richmond, Va., proposes to issue \$950,000 of 6 per cent collateral trust notes, the proceeds of which are to be used for extension of the property. G. B. Williams, secretary, has issued a call for a stockholders' meeting on December 29 to approve the issue.

A Handsome Holiday Issue.

The December number of The Southern Homeseeker and Investors' Guide, a popular and interesting quarterly issued by the Norfolk & Western Railway, of which F. H. LaBaume is agricultural and industrial agent and W. C. Saunders is general passenger agent, carries with it a Christmas greeting from Mr. LaBaume, breathing the spirit of the great annual holiday season. It is done in colors, picturing the evergreen, the holly and the mistletoe. The cover page of the magazine is also typical of Christmas. Within is an abundance of good reading matter with fine illustrations, all of which relates to the regions traversed by the Norfolk & Western lines.

War Trade Manual for Shippers.

Since considerable of the data in the "Rules and Regulations of the War Trade Board," which has been distributed very widely throughout the country, has now been superseded by new rulings and lists, the Division of Information of the Board is preparing a "War Trade Board Manual for Shippers," which will contain only data in force at the time of its publication.

Good Roads and Streets

Details in regard to road and street undertakings and bond issues, briefly mentioned below, are given under the proper headings in our "Construction Department" and "New Securities," published elsewhere in this issue.

Bonds Voted.

Edenton, N. C.—Town voted \$128,000 bonds for street paving.

Kenner, La.—City voted \$15,000 bonds for street improvements.

Miami, Okla.—Ottawa County voted \$350,000 bonds for constructing roads.

Monroe, N. C.—City voted \$164,000 bonds for street improvements.

Bonds to Be Voted.

El Paso, Tex.—El Paso County votes January 4 on \$250,000 bonds for road construction.

Rutherfordton, N. C.—Rutherfordton County votes January 19 on \$11,850 bonds for road construction.

Contracts Awarded.

Ardmore, Okla.—City awarded \$15,259 contract for asphalt street paving.

Dallas, Tex.—City awarded \$13,000 contract for street grading and building earth embankment.

Houston, Tex.—Government awarded \$84,000 contract for paving streets with shell at Camp Logan.

Paris, Tex.—City awarded contract for bitulithic paving on 5 blocks of streets, \$20,000 being available for this improvement.

Rockport, Mo.—City awarded \$53,400 contract for 7 miles of street paving.

Texarkana, Tex.—City awarded contract for paving 15 blocks of streets.

Wheeler, Tex.—Wheeler County awarded \$25,000 contract for road construction.

Contracts to Be Awarded.

Canyon, Tex.—Randell County will grade 50 miles of roads and construct concrete culverts, \$66,000 being available for these highway improvements.

Dallas, Tex.—Dallas county will expend \$40,000 for road improvements.

Danville, Mo.—Montgomery County will construct gravel roads to cost \$90,000.

Richmond, Va.—City will pave additional streets and has \$11,902 available for this improvement.

Walnut Ridge, Ark.—Lawrence County will construct 14 miles of highway.

Billion Dollars for Proposed National Military Highways.

B. W. G. COUTTS, Big Stone Gap, Va.

Charles Henry Davis, president of the National Highway Association, is organizing a drive to get \$1,000,000,000 for national military highways to be expended directly after peace is declared, to force business prosperity while the big readjustment is taking place.

One of the first roads to be projected will be the Roosevelt National Military Highway from the Kentucky coal fields through the heart of the highlands of Kentucky and Virginia to Charleston, S. C.

The original route of the Roosevelt Highway is up the three southeastern Kentucky rivers, Cumberland, Big Sandy and Kentucky rivers. The branch up the Cumberland starts from Louisville and traverses the Cumberland through Harlan county to Big Stone Gap, Va. This branch has the backing of the Louisville Board of Trade and the steel corporation interests located in Harlan county, as well as every coal interest in Harlan county.

The branch up the Kentucky River, known as the Lexington-to-Norton Interstate Highway, has been approved by Governor Stanley of Kentucky, and has the backing of the Standard Oil coal interests in Letcher county, as well as Lexington, and all towns from Lexington to Norton are more or less organized, ready for the big drive.

The branch up the Big Sandy River is to be known as the Portsmouth-to-Bristol Highway, with Henry Rob-

erts, president of the Appalachian Highway Association, back of it. The cities of Portsmouth, Ironton and Huntington have pledged their fullest co-operation.

Mr. Davis, president of the National Highway Association, owns 100,000 acres of Harlan's choicest coal lands, and is counted on to head the big drive for the Roosevelt National Military Highway. Mr. Henry Roberts of Bristol has stated that he would handle the Big Sandy River branch from Portsmouth to Bristol by way of Coeburn and down Clinch River. The hearty approval this Roosevelt National Military Highway is getting from every quarter in this immense coal and iron field assures its construction at the very earliest possible moment. And it is hoped to start the movement at a meeting now being arranged to mobilize the coal interests in Kentucky. The War Department will send an expert to Southeastern Kentucky to mobilize the owners of 50,000,000,000 tons of coal to plan ways and means of increasing the output easily 100 per cent, and Colonel Roosevelt will be invited to attend this meeting.

R. G. Rhett of Charleston, S. C., president of the National Chamber of Commerce, recognized as one of the biggest boosters in the United States, is keenly alive to the possibilities of Charleston as a tidewater outlet for the immense Kentucky resources, and his several letters to the recognized leaders in this field have gone a long way toward bringing some very progressive ideas to a head. Mr. Rhett's interest in this project, already manifested in a substantial way, is calculated to give added impetus to the movement now well under way.

In a personal letter Mr. Coutts says:

"There is one fact I would like to have added, but was afraid it would keep you from publishing it. It is this: The Louisville & Nashville and the Southern Railway have an agreement to divide the South, thus keeping Kentucky coal from being thrown open to fuller development."

[If Mr. Coutts was laboring under the impression that the MANUFACTURERS RECORD would not publish a statement because it criticised the railroads, he has failed to read the MANUFACTURERS RECORD carefully. Whenever the railroads of the South, or of any other section, are guilty of doing anything which is contrary to the best interests of the country, the MANUFACTURERS RECORD is more than glad to have the facts.—Editor MANUFACTURERS RECORD.]

Good Road Work in Eastern Kentucky.

Whitesburg, Ky., December 6—[Special.]—While good-road work has not been pushed during the fall months as contemplated, considerable important work has been executed in Eastern Kentucky, going far toward completing a network of good roads throughout the rapidly developing coal fields of this section.

Taking all in all, there is much good-road enthusiasm in Eastern Kentucky, and as a result there will be much road building done during the new year 1918.

The Consolidation Coal Co. is among the big corporations that have done quite a lot of model road building since midsummer. At first this company, one of the largest in the Elkhorn field, completed a model hard-surfaced road in the Miller's Creek section of Johnson county, connecting Paintsville, the county-seat, with VanLear, a large central plant of the company. The Consolidation Coal Co. has also done much road work around Jenkins, the central town in the main Elkhorn field; McRoberts, Dunham and Burdine, in Letcher county, improving old pieces of roadway, putting them in condition for the wintry weather, and constructing new connections, expending thousands of dollars in the work. The company now boasts of a good all-the-year automobile road leading from Burdine via Jenkins, Dunham, McRoberts to Fleming, the central town of the Elk Horn Mining Corporation, 15 miles. With a little repair work which they propose doing in connection with the county, a splendid roadway will be possible from Fleming into this city, 12 miles.

Around Secco the South East Coal Co. is completing several miles of roadway, over which regular motor service will be established. The road between Secco and La Viers, a new town on the Kentucky River, has been reconstructed at a cost of thousands of dollars. Al-

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though this is a county roadway, the county was not asked to expend any money.

Other corporations, including the Elk Horn Mining Corporation, have done much good-road work during the summer and fall. Around Garrett, Wayland, Weeksburg, Wheelright and the other towns in the Beaver Creek section the latter company is rushing good-roads work.

In the Big Sandy Valley, especially in Pike and Floyd counties, more or less work has been in progress. In Pike county progress has been made on a model roadway to run from Pikeville to Prestonsburg, the county-seat of Floyd, 20 miles. It is expected that this roadway will be completed and opened for traffic by early next spring.

Although Pike county defeated bonds last year, the fiscal courts are making it possible for the money necessary in good-road building. The county will soon have a good system of roads.

Letcher county is prosecuting good-road work in almost every section. A model thoroughfare is being constructed across Tolson Mountain connecting Line Fork with the Louisville & Nashville. The county is also constructing several steel bridges, one across the Kentucky River at Sandlick immediately below this city; another at Tolson, and still another at Ulvah.

Five Million Worth of Road Work Held Up in Mississippi by Priority Order No. 2.

Jackson, Miss., December 8—[Special.]—Five million dollars' worth of good roads work in Mississippi is indefinitely held up because of car shortage. Efforts to get cars for handling gravel have been of no avail, and the Railroads War Board has held that cars cannot be had for the present, at least. Estimates furnished by State Highway Engineer X. A. Kramer show that there is \$7,500,000 available for highway construction work in the State at present.

In many counties gravel beds lie near enough to the highways that are building so that the material may be hauled with motor trucks or teams. It is not everywhere possible to get A1 road-building gravel, however.

Barring such unavoidable difficulties as the present one, the State would have had a system of highways in two years' time that would have borne favorable comparison with any in the country. Highway officials are hopeful that the situation may ease up in the early spring, when rail traffic usually becomes lighter.

To Operate Rusk Iron Properties.

President L. P. Featherstone of the Texas Steel Co., Beaumont, Tex., which proposes to build an open-hearth steel plant, has purchased the Rusk (Tex.) iron industry operated for many years by the Texas State Prison Commission. This purchase includes iron furnace, iron pipe works, electric-light plant, railway terminal trackage, the water rights, dwellings and 136 acres of iron-ore land. The purchase price is \$112,500, and this does not include the unmined iron ore, for which Mr. Featherstone is to pay to the State 50 cents per ton as mined on a 50 per cent. metallic ton basis. This sale is in accordance with a resolution passed by the Texas Legislature, which provides that the purchaser must rehabilitate the furnace and operate it for at least one year. The furnace has a daily capacity of 120 tons of iron. The purchase price is to be paid half in cash and the balance on terms.

It is reported that plans are under consideration for equipping the Rusk properties to engage in the production of war materials for the Government, and it is believed that Mr. Featherstone contemplates utilizing the plants at Rusk as the basis of the extensive iron mining and manufacturing enterprise which his company has been planning, several million dollars to be the initial investment.

Equipment Notes Sold.

Seaboard Air Line has sold \$1,200,000 of 6 per cent equipment notes, maturing serially from June, 1918, to December, 1927, to a syndicate headed by the National City Company of New York. The proceeds will be employed to improve the rolling stock.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

Cross Cotton Mill Addition.

An \$8000 building addition will be erected by the Cross Cotton Mills Co., Marion, N. C., this structure to be of brick and 301 feet long by 78 feet wide. An equipment of 4000 spindles will be added to the present equipment of 3000 spindles, and the new machinery (including a boiler for the power plant) has been ordered. The daily capacity will be increased from 1500 to 3500 pounds of No. 30 cotton yarn.

Wants Cotton Mill Located.

J. T. Curtis, secretary of the Haleyville Commercial Club, Haleyville, Ala., writes to the MANUFACTURERS RECORD:

"Haleyville has a population of about 2000 people, and is steadily growing. The Commercial Club has been trying to interest capital to come here and build a cotton mill. We want a mill to locate here. We have annually about 10,000 bales of cotton sold here, and the nearest mill to us is Cordova, Ala. The club will give its hearty co-operation to any kind of an industry that wishes to locate in this country. If you can put us in touch with anyone who might be interested in promoting a cotton mill or other good industry it would be appreciated. We have a good high healthy climate to live in here."

\$100,000 Hosiery Mill Company.

The Collettsville (N. C.) Hosiery Mill has been incorporated with \$100,000 capital to establish a plant for knitting hosiery. Its incorporators are L. G. Green, J. V. Gregg and Julius Grisett.

Puritan Mills Company.

The Puritan Mills Co., Fayetteville, N. C., recently incorporated, has purchased the Holt-Morgan Mills with an equipment of 10,000 spindles and 580 looms, driven by electric power. This new company has a capital stock of \$600,000 and the following officers: F. L. Williamson, president; Junius H. Harden, vice-president; L. Banks Williamson, secretary-treasurer.

\$125,000 Knit Underwear Mill

The Moffitt Underwear Co., High Point, N. C., has been incorporated with \$125,000 capital to manufacture knit underwear. Its incorporators are H. A. Moffitt, John P. Hayworth, George T. Penny and associates.

The Latham Mills.

Details have been determined for the Latham Mills of Greensboro, N. C., recently incorporated with \$100,000 capital. A building has been secured and it will be equipped with 100 knitting machines, 20 loopers, drying equipment, finishing equipment and machinery for manufacturing paper boxes. Sixty operators will be employed. Officers elected as follows: J. E. Latham, president; Edward Latham, vice-president; R. A. Douglas, secretary-treasurer; W. P. Biddle, manager.

Gaston Hosiery Co. Organized.

Organization has been effected and details determined by the Gaston Hosiery Co., Cherryville, N. C.,

recently mentioned as capitalized at \$100,000. A building has been secured and the equipment has been ordered, to include 25 knitting machines and electric power drive. Men's half-hose will be knit and 25 operatives will be employed. N. B. Kendrick is president, and A. B. Cook is treasurer.

Knit Well Hosiery Co.

Fifty knitting machines will be the initial equipment of the Knit Well Hosiery Co. of East Durham, N. C. This company has incorporated with \$50,000 capital and organized with M. R. Strickland as president.

Bonsack Woolen Mills.

Woolen cloth is manufactured by the Bonsack (Va.) Woolen Mills, incorporated during the week with \$50,000 capital. F. H. Chamberlain is president and S. W. Chamberlain is secretary. This company has 1080 spindles and 23 looms.

Textile Notes.

C. D. Smith, High Point, N. C., will establish the High Point Underwear Mills, and has plans for an ultimate capacity of 12,000 light-weight underwear garments.

By January the Highland Cotton Mill of High Point, N. C., expects to have in operation its additional 10,000-spindle mill, under construction for some months. During the summer this company added 5000 spindles to its No. 2 mill.

MINING

Alabama Graphite Development.

Graphite properties in Alabama will be developed by the Talladega Pardale Graphite Products Co., Talladega, Ala., which has been incorporated by R. G. Nickles, W. L. Northen, T. V. Watson, G. W. Ragsdale and T. B. Williams. The capitalization is \$100,000.

To Mine Virginia Coal.

Virginia coal will be mined by the Russell Fork Coal Mining Co. of Roanoke, which has been chartered with \$500,000 capital. R. C. Forbes, Lynchburg, Va., is president and W. H. Partain, Jr., Baltimore, is secretary-treasurer of this new corporation.

Oklahoma Coal Mining Development.

Three thousand acres of coal land will be developed by the Blackstone Consolidated Coal Co. of Okmulgee, Okla., recently incorporated with \$1,000,000 capital. The mines are near Henryetta, with a daily output of 400 tons, and additional mines will be equipped to increase this to 2500 tons, bids for the new machinery being now under consideration. Hoisting and haulage engines, cars, railroad track and mine scales, rails, screens, mining machinery, etc., will be purchased. Officers have been elected as follows: Harlan Reed, president and treasurer; W. H. Wigton, vice-president and manager; L. L. Cowley, secretary.

50,000-Acre Drainage District.

About 50,000 acres of land in Washington county, Mississippi, will be reclaimed for cultivation by the Murphy Bayou Drainage District. This district has been organized with the following commissioners: C. D. Walcott, Hollandale, Miss.; N. A. Treadway of Percy, Miss., and Will Burnette of Willett, Miss. Surveys will begin at once with a view to inviting construction proposals early in 1918. The Morgan Engineering Co. of Memphis, Tenn., is the chief engineer of the district.

V.P.; F. E. Barron, Secy.; A. F. Pringle, Treas.

FLOUR, FEED AND MEAL MILLS

Tex., Galveston.—Texas Star Flour Mills advises Manufacturers Record: Additions to building to extent of \$20,000 and 800 bbls. capacity; contracts let. (Lately noted increasing capital from \$600,000 to \$1,500,000.)

Tex., Mansfield.—Mansfield Mill & Elevator Co., capital \$15,000, Incptd. by E. R. Holland, W. T. Hudson and W. H. Bacon.

FOUNDRY AND MACHINE PLANTS

Ala., Birmingham—Cast-Iron Pipe.—National Cast Iron Pipe & Foundry Co. increased capital from \$250,000 to \$500,000.

Fla., Jacksonville—Iron Works.—Vulcan Iron Works contemplate building plant.

Md., Baltimore—Iron Works.—P. Kennedy foundry (Baltimore Malleable Iron Co. of New York), Charles and Wells Sts., has plans for 1-story foundry, 80x80 ft.; Frainle Bros. & Haigley, Contrs., 18 Clay St., Baltimore.

Mo., Kansas City—Castings.—Akers Mfg. Co., capital \$30,000, Incptd. by H. H. Akers, A. A. Buxton and L. A. Buxton; manufacture iron, brass and metal castings.

Mo., St. Louis—Die Molds.—American Die Mold Co., capital \$50,000, Incptd. by G. Howard Thompson, W. C. Siebens, John M. Tulleu and H. C. McMillan.

Okla., Ada—Foundry, etc.—Wm. Gilbert, Fulton, Mo., will erect foundry and machine shops; has equipment.

Okla., Oklahoma City—Pump.—Visible Pump Co., capital \$500,000, Incptd. by Orville Knight and J. B. Pickens of Drumright, Okla., and R. J. Morrow of Tulsa, Okla.

S. C., Spartanburg—Machinery.—Lummus Machinery Co., cap. \$10,000, Incptd. by Robt. E. Carter and J. L. Lummus of Spartanburg, and A. L. Lummus of Saluda, N. C.

Va., Richmond—Forgings, Castings and Scales.—Virginia Forging & Mfg. Co. organized to manufacture bronze forgings, high grade brass and composition castings; purchased equipment of Richmond Scale Co., and will continue manufacturing computing scales; remove to new and larger plant; add new equipment for making the forgings and castings.

GAS AND OIL ENTERPRISES

Ga., Macon.—Central Oil Co., capital \$125,000, Incptd. by Joel Hurt of Atlanta, Ga., and others.

Ky., Lexington.—Kentucky Star Oil Co. Incptd. with \$500,000 capital by Victor D. Hardy, A. B. Jones and J. W. Hardy.

Ky., Lexington.—Kentucky-Badger Oil Producing Co. chartered with \$50,000 capital by A. L. Stengel, G. W. Botkin, both of Lexington, and W. H. Jones of Fort Atkinson, Wis.

Mo., Kansas City.—Pay Pool Oil Co., capital \$25,000, Incptd. by Dan L. Hyde, C. O. Davenport and John N. Davis.

Mo., Kansas City.—Millers' Oil & Gas Co., capital \$40,000, Incptd. by A. J. Poor, E. V. Hoffman, J. H. Dowler and others.

Mo., Kansas City.—Speedwell Oil & Gas Co., capital \$50,000, Incptd. by Lewis H. Whitcomb and Mary B. Whitcomb.

Mo., Kansas City.—Verdigris Oil & Gas Co., capital \$50,000, Incptd. by C. V. Higby, Alfa Elberfeld and others.

Okla., Ardmore.—McWorth Oil & Gas Co., capital \$40,000, Incptd. by W. A. Flowers, Brock, and C. A. Zellner, Ardmore, and Charles H. Bliggle, Lone Grove, Okla.

Okla., Cherokee.—Cherowata Oil Co. Incptd. by J. N. Langston, Jr., H. B. Wilson and Jay N. Craver; capital \$10,000.

Okla., Chickasha.—Chickasha-Garber Petroleum Co. Incptd. by H. O. Hayes, J. D. Bui and Bert Jackson; capital \$200,000.

Okla., Cushing.—Dean Oil Co. Incptd. by J. F. Dean and William Yantis, Cushing, and C. A. Dawes of Yale, Okla.; capital \$100,000.

Okla., Enid.—Hoy-Garber Oil Co., capital \$250,000, Incptd. by J. C. McKnight of Chickasha, Okla., C. W. Whitehead and J. B. Riddle of Ruth Springs, Okla.

Okla., Muskogee—Oil Refinery.—Nupro Refining Co., 715 Barnes Bldg., later (under Okla., Henryetta) noted as to build plant costing \$80,000, advises Manufacturers Record: Buildings about completed; 250-bbl. plant at start; increase 10 times as soon as one unit is in operation; D'Yarmett process; electrically-driven machinery, with own generator; all contracts let to Memphis Engineering & Supply Co.; Robt. C. Nifong,

Engr., Box 450, Henryetta, Okla. In August noted Incptd., capital \$50,000, by W. E. D'Yarmett, C. P. Getwals and N. R. Little. (See Machinery Wanted—Motors; Tanks.)

Okla., Miami—Mississippi-Oklahoma Royalty Co. Incptd. by W. E. Broach, Tulsa; H. F. Broach, Meridian, Miss.; H. S. Clarke, Oklahoma City; capital \$100,000.

Okla., Nowata.—Three Star Oil & Gas Co. Incptd. by James R. Scott and Laurena D. Rell, Nowata, and W. G. De Haven, Chicago; capital \$150,000.

Okla., Oklahoma City.—Oil Rights Oil Co. Incptd. by F. D. Barley, Charles L. Woodward and James S. Twyford; capital \$25,000.

Okla., Oklahoma City.—Proven Lease Oil Co., capital \$50,000, Incptd. by Frank Hoopes, J. E. Offutt and Lawrence Gilbert.

Okla., Oklahoma City.—Torchlight Oil Co., capital \$400,000, Incptd. by J. P. Bell, W. M. Blaize and J. T. Bryant.

Okla., Oklahoma City—Oil Refinery.—Am-I Oil & Refining Co. Incptd. by W. H. Crittenden and M. A. Hankel, Norman, and G. R. Mesker, Oklahoma City; capital \$400,000.

Okla., Ponca City.—Mann & Dickey Drilling Co. Incptd. by J. Q. Louthan of Ponca City, W. K. Mann, Arkansas City, Kan., and W. J. Dickey, Gueda Springs, Kan.; capital \$10,000.

Okla., Poteau.—Arrow Head Oil & Gas Co. organized to develop several thousand acres oil and gas lands in Poteau field; John A. McGinnis, Prest.; Wm. E. McGinnis, Treas.; both of Boston, Mass.

Okla., Ringling—Oil Refinery.—Ringling Oil & Refining Co., cap. \$1,000,000, Incptd.; Arch Carpenter, Prest.; T. H. Harwell, V.P.; G. A. Fletcher, Secy.; Emory F. James, Treas.

Okla., Sapulpa.—H. A. L. F. Oil & Gas Co. Incptd. by H. M. Watchorn, Frank Blair and W. M. Harrison; capital \$25,000.

Okla., Shawnee—Oil Refinery.—Jno. W. Hogan, Tulsa, Okla., will build \$300,000 oil refinery; has 30-acre site.

Okla., Tulsa.—Bradford Rig & Reel Co., capital \$100,000, Incptd. by F. J. Bradford, E. R. Perry and V. H. Van Horn.

Okla., Tulsa.—Oklahoma Lubricating Co. Incptd. by A. M. McSpadden and L. E. Hutchens, Tulsa, and N. J. Morehouse, St. Joe, Mich.; capital \$80,000.

S. C., Anderson—Gas Plant.—Anderson City Gas Co., cap. \$10,000, Incptd. by Jas. H. Morris of Philadelphia, Pa.; Fred E. Lyford of New York, and Chas. C. Dickinson, East Smithfield, Pa.

Tex., Brownwood.—Pecan Bayou Oil Co., capital \$10,000, Incptd. by K. C. Ray, E. E. Kirkpatrick and H. G. Barker.

Tex., Dallas—Gasoline.—Automobile Gasoline Co., capital \$5000, Incptd. by C. C. Alber of Dallas, A. K. Anderson of Thrall, Tex., and E. H. Nielsen of San Antonio.

Tex., Galveston.—The 201 Company chartered with \$20,000 capital by Jess Fry of Galveston, J. G. Fry of Dallas, Tex., and L. W. Wells of Terrell.

Tex., Houston.—Hautier Exploration Co. chartered by J. A. Hautier, R. W. Gillette and Jno. A. Embrey; capital \$10,000.

Tex., Houston.—Texas Sales Corp. chartered with \$15,000 capital by J. A. Jones and J. M. Conlin of Houston, and C. F. Seagrave of Teague, Tex.

Tex., Houston.—Cattlemen's Petroleum Co., capital \$75,000, Incptd. by H. S. Dew, B. N. Flieklinger and H. W. Dew.

W. Va., Belmont.—Tait Farm Oil Co. chartered with \$50,000 capital by Nathaniel Parr of Belmont, Abram Goldberg of Pittsburgh, Pa., and others.

Okla., Ardmore.—McWorth Oil & Gas Co., capital \$40,000, Incptd. by W. A. Flowers, Brock, and C. A. Zellner, Ardmore, and Charles H. Bliggle, Lone Grove, Okla.

Okla., Cherokee.—Cherowata Oil Co. Incptd. by J. N. Langston, Jr., H. B. Wilson and Jay N. Craver; capital \$10,000.

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E. R. J. Wigg, Treas.; all of Norfolk; J. T. Emmerson, V.P., Portsmouth, Va.

IRON AND STEEL PLANTS

Tex., Rusk—Iron Furnace, etc.—L. P. Featherstone, Prest., Texas Steel Co., Beaumont, purchased Rusk foundry property from State for \$12,500; include iron furnace, pipe foundry, electric-light plant, dwellings, etc.; new owner contemplates general improvements and rehabilitation of blast furnace; daily capacity 120 tons iron.

LAND DEVELOPMENTS

Ala., Mobile.—Loxley Company, capital \$50,000, Incptd. for farm development.

Fla., Sarasota.—Crescent Beach Land Co., capital \$50,000, Incptd.; Stuart F. Hamill, Prest., Oakland, Md.; Howard F. Johnson, V.P.; Nellie Graham Johnson, Secy.-Treas.; both of Sarasota.

Fla., St. Petersburg.—Bayou Bonita Development Co. chartered with \$100,000 capital; Chas. R. Hall, Prest.; Emma M. Hall, V.P.; both of Avalon, N. J.; R. B. Worthington, Treas.; Lula E. Worthington, Secy.; both of Newark, N. J.

Fla., Vero.—Indian River Grove & Farming Co., cap. \$10,000, Incptd.; John E. Nelson, Prest.; Emil E. Appel, V.P. and Secy.; Herman S. Davis, Treas.-Mgr.

Fla., West Palm Beach.—Associated Realty Investors, 120 Broadway, organized with Alfred H. Wagg, Prest.; M. Morgenthau, Jr., V.P.; Jas. Frank, Treas.; Carl B. Elmer, Secy.; develop as residential section 125 acres, 1 mi. south of West Palm Beach; improvements to include landscaping, several ml. of rock road, sidewalks, parkings, water, street lighting and sewerage system and recreation pier extending into lake.

Ga., Atlanta.—Appalachian Corporation, Jas. L. Wright, V.P., New Orleans, La., will issue \$2,000,000 bonds to be expended principally for planting additional orchards and otherwise improving and extending properties in Georgia; \$400,000 for further improvements to cold-storage facilities in New Orleans. (Betterments at New Orleans heretofore noted.)

Mo., Ednor.—Lucknow Orchard Co. organized; Wm. Francis Thomas, Prest.; L. C. Thomas, Secy.; develop 540 acres containing 6000 apple trees in bearing; general farming and orcharding; Lawrence K. Kelly, Supt. (Lately noted Incptd., capital \$10,000.)

S. C., Camden.—Ganders Creek Farm Co., cap. \$5000, Incptd. by Thos. J. Kirkland and L. A. Kirkland.

Va., Fairfax.—Fairfax Farms Co., capital \$12,000, Incptd.; E. R. Lake, Prest., 2033 Park Road N. W.; C. G. Clark, Secy.; both of Washington, D. C.

LUMBER MANUFACTURING

Ala., Athens.—Graves & Davis will rebuild planing mill reported burned at loss of \$25,000.

Ala., Birmingham.—David Bluff Land & Timber Co., capital \$10,000, Incptd.; Jonas Schwab, Prest.-Treas.; T. E. Brent, Secy.

Ala., Selma.—Fremont Lumber Co., capital \$10,000, Incptd. by J. H. White and others.

Ala., Sylacauga.—R. L. Rumsey will rebuild saw and planing mill reported burned.

Fla., Fort Myers.—Alapata Company, capital \$250,000, Incptd.; W. G. Langford, Prest.; Clyde Gonzales, V.P.; C. C. Pursley, Secy.-Treas.

Miss., Columbus.—Columbus Lumber Co., D. F. McCullough, Mgr., will expend \$70,000 for improvements, to include erection of dressed lumber shed to protect 2,000,000 ft. lumber, installation of additional drykilns to increase daily capacity to 100,000 ft., enlargement of sawmill by addition of 2 boilers and erection of machine shop; purchased 12 ml. of steel rails, which are now being laid; rolling stock to include 2 locomotives and 10 cars.

Miss., Meridian.—Kaye Slingley Lumber Co., capital \$10,000, Incptd. by Frank Kaye and W. H. Slingley of Meridian, and E. O. Clark of Montgomery, Ala.

N. C., Wilmington.—East Coast Mfg. Co., T. C. Eachin, Prest., has completed out-building, power and machinery for lumber, staves and heading; will purchase lath, shingle and crating machinery; in November was noted Incptd., officers named and to build lumber plant on Smith's Creek. (See Woodworking Plants.)

S. C., Spartanburg.—Hope Lumber & Mfg. Co. organized by R. J. Worley, C. K. Callahan and Jesse W. Boyd.

Tenn., Memphis.—Moore & McFerren, 865 Front St., will rebuild sawmill reported burned at loss of \$25,000.

Tex., Kelty's.—San Augustine County Lumber Co. increased capital from \$20,000 to \$40,000.

Tex., Lufkin.—Cotton Belt Lumber Co. will rebuild mill reported burned at loss of \$5000.

METAL-WORKING PLANTS

D. C., Washington—Brass.—Bureau of Yards and Docks, Navy Dept., let contract A. C. Moses, 916 New York Ave. N. W., Washington, at \$281,507 to erect brass foundry.

MINING

Ala., Birmingham—Iron.—Central Alabama Coal & Iron Co. chartered by Fred Hoffman, Jno. M. Thomas and J. M. Rebs, Jr., all of Milwaukee, Wis.

Ala., Talladega—Graphite.—Talladega Parade Graphite Products Co., capital \$100,000, Incptd. by R. G. Nickles, W. L. Northen, T. V. Watson, G. W. Ragsdale and T. B. Williams.

Ark., Batesville—Manganese.—Arkansas Manganese Ore Co. chartered by W. H. Denison, H. S. Handford and J. S. Spencer; capital \$80,000.

Ky., Reedville—Fire Clay.—S. M. Bradley, Prest., Johns Run Coal Co., Morehead, Ky., will develop fire-clay mines on tract of Johns Run Coal Co.

Mo., Joplin—Lead and Zinc.—Mutual Lead & Zinc Co., capital \$100,000, Incptd. by J. T. Murray, J. T. Muhall and L. P. Welch.

Mo., Kansas City—Lead and Zinc.—Kansas City S. L. & Z. Mining Co., capital \$20,000, Incptd. by Leslie C. Johnson, Ernest L. Johnson and Chas. W. Anthony.

Mo., Kansas City—Sand.—Stewart Sand Co., capital \$1,000,000, Incptd. by W. S. McLucas, M. E. Dixon and others.

North Carolina—Kaolin.—Marshall Haney, Mining Engr., Lydin, Va., interested in organization of company to develop 100 acres kaolin property; open machinery bids early in 1918. (See Machinery Wanted—Mining Machinery.)

N. C., Murphy—Iron Ore.—Appalachian Iron & Mining Co., cap. \$15,000, Incptd. by Fred A. Cloudy of Murphy, G. L. Leavenworth of Copper Hill, Tenn., and S. Long of Etowah, Tenn.

N. C., Willardsville—Iron.—Granville Iron Corp. organized by New York capitalists, and leased Granville County iron-ore land for development; Daniel F. Lewis, Prest., Brooklyn, N. Y.

Okl., Commerce—Lead and Zinc.—Triangle Mines Co., N. C. Barry, Prest., will erect 150-ton mill; install individual electric-light and power plant.

Okl., Miami—Lead and Zinc.—Laughnut Mining Co., capital \$250,000, Incptd. by F. C. Graham, S. C. Vinson and T. R. Dean. (Lately noted organized.)

Okl., Miami—Lucky Joe Mining Co., capital \$100,000, Incptd. by A. E. Wilder of Miami, Powell Briscoe of Marlow, Okla., and J. P. Matthews of El Reno, Okla.

Okl., Miami—Lead and Zinc.—Triangle Mines Co. will build 150-ton mill and later may increase to 250 tons.

Okl., Miami—Lead and Zinc.—Southern Lead & Zinc Co. Incptd. by W. E. Broach, Tulsa; H. F. Broach, Meridian, Miss.; H. S. Clarke, Oklahoma City; capital \$300,000.

Okl., Miami—Lead and Zinc.—Western Lead & Zinc Co. Incptd. by W. E. Broach, Tulsa; H. F. Broach, Meridian, Miss.; H. S. Clarke, Oklahoma City; capital \$200,000.

Okl., Muskogee—Ozark Mining & Royalty Co. Incptd. by J. L. Wagner, J. R. Startzell and R. H. Startzell; capital \$8000.

Okl., Pawnee—Lead and Zinc.—Maxine Mining Co., capital \$250,000, Incptd. by F. C. Shoemaker and P. E. Howe of Pawnee, Okla., and W. C. Miller of Miami, Okla.

Okl., Miami—Lead and Zinc.—Miami Zinc & Lead Syndicate, cap. \$5,000,000, Incptd. by E. D. Nix, W. H. Logan and Dick Rice of Miami; C. C. Slaughter, Jr., and L. P. Gamble of Dallas, Tex., and others; acquires property of St. Louis Mining & Smelting Co., including 1400 acres mineral lands; reported to expend about \$5,000,000 for development work to include several mills of large capacity and probably smelter plant.

Okl., Picher—Lead and Zinc.—Cortez Mining Co., capital \$140,000, Incptd.; build mill and develop mining lease; G. E. Haigh, Prest.; Chas. Tweedie, V.P.; Walter Steininger, Secy.-Treas.; all of Jefferson City, Mo.

Tenn., Nashville—Phosphate.—Kead Phosphate Co. will install new grinding and screening equipment; has contracted for this equipment.

Va., Bristol—Minerals.—Southern Minerals Corp. increased capital from \$100,000 to \$200,000.

MISCELLANEOUS CONSTRUCTION

Fla., Jacksonville—Jetty Improvement.—Government will raise outer portions of jetties at entrance to St. John's River; receives bids until Jan. 5 at United States Engr. Office, Masonic Temple, Jacksonville, for construction and furnishing 62,000 tons stone. (See Machinery Wanted—Jetty Construction.)

Fla., St. Petersburg—Seawall, etc.—City will construct concrete slab seawall or solid concrete seawall along waterfront; also Cameron septic tank system and pier; G. B. Shepard, Director of Finance, receives bids until Dec. 15; date postponed from Nov. 28 lately noted. (See Machinery Wanted—Seawall Construction, etc.)

La., New Orleans—Jetty.—Government let contract Lester F. Alexander of New Orleans at \$180,486 to place 33,300 tons stone on jetties at Southwest Pass, Mississippi River. (Lately noted inviting bids.)

La., Shreveport—Levee.—Comr. Caddo Levee Dist. will construct 650,000 cu. yds. earthwork; Briarfield to Cottonwood Bayou Levee, contents 102,000 cu. yds.; Cottonwood Bayou to Hurricane Bluff Levee, contents 106,000 cu. yds.; Hurricane Bluff to Cairo Levee, contents 105,000 cu. yds.; Cairo to Fire Point Levee, contents 97,000 cu. yds.; Fire Point to Pickett Levee, contents 116,000 cu. yds.; Caldwell Point to Tones Bayou Levee, contents 120,000 cu. yds.; all riverside enlargement, with Fire Point to Pickett Levee, riverside enlargement and levee; bids until Dec. 28. (See Machinery Wanted—Levee Construction.)

Md., Annapolis—Dredging.—Government let contract Geo. Leary Construction Co., 17 State St., New York, at \$753,400 for dredging in connection with pier and bulkhead wall.

Miss., Vicksburg—Levee.—Third Mississippi River Dist., P. O. Box 404, let following contracts to construct 410,000 cu. yds. levee work: Roach, Stansell, Lawrence Bros. & Co., Memphis, Tenn., at \$52,480, Riverton Levee; H. B. Blanks, Vicksburg, Miss., at \$72,500, Worthington Levee. (Lately noted inviting bids.)

Tex., Corpus Christi—Waterfront Improvement.—City votes Jan. 2 on \$600,000 bonds to improve waterfront; plans include construction of 15,000 ft. shore protection, several million yds. of filling, 5 mi. paved streets, concrete bridges, etc.; Roy Miller, Mayor; City Engr. Stevens has submitted 2 sets of plans to Council; decision as to character of improvements will soon be made. (Noted in October to vote on bonds for bayfront improvements to include seawall with driveways and parks.)

Va., Norfolk—Dredging.—Government let contract Jas. Stewart & Co. (New York offices, 30 Church St.), J. L. Jacobs, Gen. Southern Mgr., for improvements at Sewalls Point, involving several million dollars' worth of waterfront and harbor betterments near naval base; work will include pier 1000 ft. long and bulkhead 2 mi. long, enclosing about 300 acres Government ground; mainly creosoted piling and heavy timber construction.

Va., Norfolk—Dredging.—Dock Commissioners let contract H. P. Converse & Co. of Boston, Mass., for dredging in connection with municipal docks and piers north of Tanners Creek; 1,000,000 cu. yds. excavation; W. W. Gwathmey, Engr. (Lately noted inviting bids.)

MISCELLANEOUS ENTERPRISES

Ala., Birmingham—Dairy.—Gorman-Gam-mill Seed & Dairy Co. increased capital to \$15,000.

Ala., Montgomery—Construction.—Greeson Construction Co., capital \$15,000, Incptd. by A. C. Greeson, Richard Ryand and H. A. Goodrich.

Fla., Pensacola—Fisheries.—Catanzano Fisheries Co., capital \$15,000, Incptd.; J. C. Catanzano, Prest., Birmingham, Ala.; Geo. C. Greene, V.-P. and Gen. Mgr., Pensacola; N. Catanzano, Secy.-Treas., Birmingham, Ala.; acquired Falk Fish Co.'s properties.

Ga., Rome—Navigation.—Coosa River Navigation Co., capital \$12,000, Incptd. by H. V. Burks, H. H. Arrington and others.

La., Lake Charles—Livestock.—Duhig-Levy Co., capital \$50,000, Incptd. by W. J. Duhig, A. Levy and S. A. Guldry.

Md., Centerville—Publishing.—Bureau of Publication, capital \$10,000, Incptd. by Wm. J. Price and others.

Mo., Bowling Green.—Bowling Green Mineral Springs Co., C. E. Stile, Prest., Kirksville, Mo., is reported having plans prepared for erection of bottling plant.

Mo., St. Louis—Iron and Metal.—Central Iron & Metal Co., capital \$15,000, Incptd. by Alex. Crall, Louis Ladinsky and Louis Mayer.

Okla., Tulsa—Construction.—Lorch Construction Co. Incptd. by Horace D. Lorch and J. A. Drais, Yale, Okla., and Ignatz Schuster, New York; capital \$50,000.

S. C., Laurens—Livestock.—Kentucky Horse & Mule Co., cap. \$5000, Incptd. by D. H. Counts of Laurens, and T. A. Green of Spartanburg S. C.

Tex., Dallas—Saddlery.—W. H. Schoelkopf Saddlery Co. increased capital from \$150,000 to \$300,000.

Tex., Fort Worth—Transfer.—Fort Worth Transfer Co., capital \$25,000, Incptd. by A. J. Beavers, Temple Harris and R. R. Wilson.

Tex., Mansfield—Grain Elevator.—Manfield Mill & Elevator Co., capital \$15,000, Incptd. by E. R. Holland, W. T. Hudson and W. H. Bacon.

Tex., San Antonio—Lithographing.—Maverick-Clarke Lithographing Co. increased capital from \$75,000 to \$200,000.

Tex., Temple—Floral.—Schroeder Floral Co. Incptd. with \$25,000 capital by H. Schroeder, T. W. Reed, J. C. Mitchell and others.

Va., Norfolk—Stevedoring.—Norfolk Stevedoring Corp., capital \$25,000, chartered; Nathaniel Daley, Prest.; L. T. Nelson, Secy.

Va., Norfolk—Livestock.—Virginia Livestock Corp., capital \$15,000, chartered; F. R. Thomas, Prest.; E. L. Field, Secy.

W. Va., Huntington—Packet Line.—Huntington & Portsmouth Packet Co., capital \$10,000, Incptd. by Ira J. Harshbarger, J. H. Long, H. B. Hagen and others.

W. Va., Mullens—Publishing.—Wyoming County Pub. Co., cap. \$10,000, Incptd. by D. D. Moran, J. L. Merrylees, A. W. Daubenspeck and others.

W. Va., Parkersburg—Packet Line.—Liberty Transit Co., capital \$500,000, organized by Geo. E. Work of Parkersburg, B. Walker Peterson, I. M. Scott, Nelson C. Hubbard of Wheeling, W. Va., and others to operate freight boats on Ohio River, between Pittsburgh and Parkersburg.

MISCELLANEOUS FACTORIES

Ala., Mobile—Pulp and Paper.—Home Pulp and Paper Mills Incptd. by F. B. Armstrong, M. McGowan and J. S. Armstrong; capital \$100,000.

Ark., Pine Bluff.—H. B. Atherton of Illinois (care of Pine Bluff Chamber of Commerce) is reported to establish potash plant.

Fla., Gabriella—Turpentine.—J. P. Musselwhite, Orlando, Fla., will rebuild turpentine still reported damaged by fire at loss of \$3000 to \$8000.

Ga., Atlanta—Medicine.—Swift Specific Medicine Co., Hunter and Butler Sts., will remodel plant; cost \$6000.

Ky., Lexington—Monuments.—Adams Monument Co., cap. \$10,000, Incptd. by Ross C. Adams, M. L. Harris and M. B. Coleman.

Ky., Owensboro—Tobacco.—Kentucky & Virginia Leaf Tobacco Co., 1008 Triplett St., organized; J. M. Vaughan, Prest.-Mgr.; E. M. Le Compte, Secy., Owensboro; G. O. Tuck, V.-P., Louisville; purchased buildings and added 2-story, 75x171-ft. brick addition; install drying machines, hydraulic presses and lifts costing \$50,000. (Lately noted Incptd., capital \$200,000.)

La., Convent—Sugar.—Louis Himmel Planting & Mfg. Co. will rebuild sugar factory on Elvise Plantation, about 6 mi. from Convent, reported burned at loss of \$100,000.

Md., Frederick—Stock Food.—E. T. Bready purchased factory bldg. 100x200 ft.; will equip to mfr. stock and poultry food preparation.

Md., Baltimore—Creamery.—Maryland Creamery Co., 1726-1732 E. Pratt St., leased 4-story warehouse at Bond and Lombard Sts.; will equip and operate in connection with creamery.

Md., Baltimore—Vinegar.—Baltimore Mfg. Co., Central Ave. and Bank St., plans addition to plant.

Mo., St. Louis—Bakery.—Delmar Baking Co., capital \$10,000, Incptd. by August H. Blumenhorst, Duval O'Neal and Bertha Blumenhorst.

N. C., Wadesboro—Matches.—G. R. Parker

is interested in proposed establishment of match factory. (See Machinery Wanted—Match Machinery.)

Okla., Newkirk—Creamery.—Newkirk Creamery organized; C. A. Johnson, Prest.; Roy S. Johnson, V.-P.; C. E. Mitchell, Secy.-Mgr.; has plant with daily capacity 300 lbs. butter, 200 lbs. cheese and 150 gals. ice cream. (Lately noted Incptd., capital \$50,000.)

Tenn., Columbia—Corn cob Pipes.—Henry A. Moore, care Moore Milling Co., is interested in proposed manufacture of corn cob pipes. (See Machinery Wanted—Pipe Machinery.)

Tenn., Nashville—Laboratories.—Jas. A. Sanders, cap. \$10,000, Incptd. by John E. Hall, John W. Moore, Hubert C. Thompson and others.

Tex., Brownsville—Sugar Mills.—LaBlanca Sugar Co. (noted organized in Nov. with \$500,000 capital), further advises Manufacturers Record: J. G. McDowell, Prest.; B. G. Melus, Treas., both of Pittsburgh, Pa.; W. F. Hull, V.-P., New York; R. B. Creager, Secy. and Asst. Treas., Brownsville; directorate also includes B. F. Youkum and F. D. Canfield of New York, and U. Hart, San Antonio, Tex.; acquired sugar factory of La Donna Sugar Co., near Donna, with 4000 acres irrigated land in Hidalgo County, adjoining factory; also 9000 acres in Cameron County, Tex.; this year mill cane from 600 acres in Hidalgo County, about same acreage in Cameron County, cane from Borderland sugar plantations and other cane; planting additional cane on both plantations, to total 2500 acres this year; expend \$50,000 during fall and winter on new planting, improvements, etc.; Donna factory is completely equipped; purchased and purchasing additional tractors, farm implements, etc.

Tex., Cleburne—Peanuts.—Texas Peanut Mill & Products Co., capital \$25,000, Incptd. by S. T. Hester, S. P. Ramsey, F. H. Barlow and B. H. Moore.

Va., Richmond—Beverages.—Continental Beverage Corp., capital \$100,000, chartered; H. L. Jones, Prest.; Jesse C. Duke, Secy.

Va., Roanoke—Chemicals.—Keyser Chemical Co., 34 W. Kirk Ave., organized with \$100,000 capital; W. L. Andrews, Prest.; H. R. Angell, V.-P.; E. L. Keyser, Secy.-Treas.; has chemical laboratory.

Va., St. Paul—Chemicals.—Clinch Valley Chemical Extract Co. is reported capitalized at \$5,000,000 to build by-product plant; said to have cleared site and to be planning immediate construction.

MOTOR CARS, GARAGES, TIRES, ETC.

D. C., Washington—Garage.—Wm. F. Selldenberg, 1355 Sheppard St., will build \$2000 private garage; Julius Wenig, Archt., 721 Tenth St. N. W.; S. A. Gaskins, Contr., 510 Washington Loan & Trust Bldg.; both of Washington.

Ga., Fort McPherson—Automobile Tires, Tubes and Casings.—Doss Rubber & Tube Co., Atlanta, Ga., advises Manufacturers Record: Factory will have 142-ft. frontage; "L" shape, extend outside elevation from "L" 232 ft., 55 ft. wide; 17,000 to 18,000 sq. ft. floor space; 1-story; stone and brick; foundation constructed to support additional story; Contr., Pittman Construction Co., Rhodes Bldg., Atlanta, Ga.; Archt., Mr. Zinn of the Pittman Co.; G. J. Reuter, care of Doss Rubber & Tire Co., Atlanta, is this company's superintendent and designer; committee with N. C. Doss (Prest.) as Chrmn., has charge of machinery contracts; daily capacity of plant 500 inner tubes and 500 casings. (Lately noted.)

Ky., Maysville—Garage.—Maysville Central Garage Co., 112 Market St., organized; O. L. Bartlett, Prest.-Mgr.; W. H. Strode, V.-P.; H. R. Wood, Secy.-Treas.; erect fireproof buildings after plans by Carpenter & Weldon, Cincinnati, O. Lately noted Incptd., capital \$10,000. (See Machinery Wanted—Boiler; Motor.)

N. C., Charlotte—Garage.—Thies-Smith Co. will erect garage; 2 stories; brick; cost \$10,000.

N. C., Charlotte—Garage, etc.—Jesse W. Garrett contract to John P. Little & Son, Charlotte, calls for addition to garage on Brevard St.; 2 stories; brick; cost about \$9000; for electrical and storage battery and general garage work. (Lately noted.)

N. C., Charlotte—Garage, etc.—Garrett contract to John P. Little & Son, Charlotte, calls for addition to garage on Brevard St.; 2 stories; brick; cost about \$9000; for electrical and storage battery and general garage work. (Lately noted.)

N. C., Charlotte—Garage, etc.—Garrett contract to John P. Little & Son, Charlotte, calls for addition to garage on Brevard St.; 2 stories; brick; cost about \$9000; for electrical and storage battery and general garage work. (Lately noted.)

N. C., Columbia—Automobiles.—Stapleton Motor Co. Incptd. by Earl M. Stapleton of Oklahoma City; L. B. Skelton and M. C. Skelton, Muskogee; capital \$100,000.

S. C., Columbia—Motor Accessories.—Motor Accessory Co. will be Incptd. with \$2000 capital by J. M. Cantey, J. Wilson Gibbs, Jr., and others.

S. C., Columbia—Automobile Accessories.—Motor Accessory Co. chartered with \$2000 capital; J. M. Cantey, Prest.; J. Wilson Gibbs, Jr., Secy.-Treas.

S. C., Greenwood—Garage.—Southern Auto & Supply Co., E. M. White, Secy.-Treas., will occupy garage to be erected by E. Z. Seymour, B. F. McKellar and others; structure will be 1 story, 72x20 ft.; Mauldin & Chapman, Contrs., Greenwood. (Lately noted Incptd. with \$10,000 capital.)

S. C., Greenwood—Garage.—A. McD. Singleton and Gerard Saunders will erect automobile salesroom; Mauldin & Chapman, Contrs., Greenwood.

Tenn., Lawrenceburg—Automobile Supplies. Bales Mfg. Co., capital \$25,000, Incptd. by W. H. Bates, H. L. Kincaid, S. Kelly and others.

Tex., Laredo—Garage.—A. D. Sory and L. W. Carroll will occupy garage to be erected by J. A. Ortiz; cost \$16,000; J. F. Beasley, Gonzales, Tex., head mechanic in charge.

Va., Richmond—Garage.—W. F. Forbes will rebuild burned garage; brick construction; cost \$2000.

Va., Richmond—Automobiles.—Lininger-Also Co., capital \$50,000, Incptd.; John B. Also, Prest.; Wm. Lininger, Secy.

Va., Roanoke—Automobile Tires.—L. G. Funkhouser and H. G. Carpenter of Roanoke, and F. A. Krusemark of Akron, Ohio, plan incorporation of company to manufacture airless automobile tires.

ROAD AND STREET WORK

Ala., Bessemer—City let contract Sullivan, Long & Hagerly of Bessemer to pave 6 blocks of 19th St. with vitrified brick.

Ala., Birmingham—Bankhead National Highway Assn., J. A. Rountree, Secy., 1021 Brown-Marx Bldg., advises Manufacturers Record: Bankhead National Highway, which traverses from Washington to Los Angeles, Cal., has definitely designated the Atlanta, Birmingham & Memphis Division; will require signs and markers of unique designs. Lately noted. (See Machinery Wanted—Signs and Markers.)

Ala., Eutaw—Greene County, W. S. Keller, State Highway Engr., Montgomery, Ala., rejected bids for surfacing portion of Eutaw and Tuscaloosa Rd.; H. O. Goss, Engr. in charge, Union, Ala.; will readvertise bids. (Bids were noted in Nov.)

Ala., Troy—City instructed engineer to prepare estimates on paving north and south Three Notch, College, Walnut and portions of Montgomery and Murphree Sts. Address The Mayor.

Ala., Tuscumbia—Colbert County Commsr. let contract at \$23,000 to grade and surface with gravel and chert portion of Jackson Highway, part of which will receive blu-minous surface treatment; 7.2 mi.; 16,132 cu. yds. earth excavation; 9650 cu. yds. gravel; 2850 cu. yds. chert; 11,215 sq. yds. blu-minous treatment, etc.; W. S. Keller, State Highway Engr., Montgomery. (Lately noted inviting bids.)

Ark., Walnut Ridge—Commsr. Lawrence County Road Improvement Dist. No. 6 will construct 14 mi. of roads, connecting Portia, Black Rock, Powhattan and Clover Bend.

Fla., De Land—Volusia County Commsr. will order vote on \$200,000 bonds to construct hard-surface road from De Land to Putnam County line; plan sand-asphalt road with shell base, curb, clay or shell shoulders 3 ft. wide, making maximum width of 15 ft.; State to furnish \$64,000 additional.

Fla., Jacksonville—Duval County Commsr. ordered election for Jan. 8 to vote on \$1,000,000 bonds for road and bridge construction; \$577,000 for roads; \$423,000 for bridges; probably asphalt, brick and concrete paving for roads; lately noted as having preliminary plans and estimates by R. M. Ellis, Jr. of Ellis, Curtis & Hooker; survey including 13 mi. of roads estimated to cost \$43,270. (See Bridges, Culverts, Vlads.)

Fla., Zolfo—City, R. C. Peterson, Clerk, will construct 10,000 sq. yds. vitrified-brick paving on Sixth Ave. and lay 2500 ft. 10-in. sewer; bids until Dec. 10. (Noted in Sept.)

Fla., West Palm Beach—Associated Realty Investors, 1269 Broadway, will construct several miles of rock road, sidewalks, etc., in connection with residential development. (See Land Development.)

La., Kenner—City will issue \$15,000 bonds for street improvements; Paul Felix, Mayor.

Miss., Ellisville—Town defeated \$300 bonds to improve streets. Address Town Clerk. (Lately noted to vote.)

December 13, 1917.]

MANUFACTURERS RECORD.

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Tex., Texarkana.—City let contract Kennedy Construction Co. to pave Olive St., from Fourth to Nineteenth Sts., about 15 blocks of street and intersections. (Lately noted.)

Tex., Wheeler.—Wheeler County, Montgomery Special Road Dist., C. E. Vandaveer, Secy., will construct gravel roads, cost \$90,000; date of opening bids not set. (Lately noted voting \$45,000 bonds.)

Mo., Rockport.—City let contract Western States Construction Co., 782½ Brandeis Bldg., Omaha, Neb., at \$53,400 to pave 7 mi. of streets. Ben B. Hurst, City Engr. (Lately noted.)

N. C., Edenton.—Town will issue \$125,000 bonds to pave sections of Main, Water, King and other streets; J. R. McMullan, Town Clerk.

N. C., Monroe.—City, John C. Sikes, Mayor, will issue \$164,000 bonds for street improvements.

N. C., Rutherfordton.—Rutherfordton County votes Jan. 19 on \$11,850 bonds to construct roads in Cool Springs, Rutherfordton, Green Hill and Chimney Rock Townships; G. F. Watson, Chrmn. County Commissioners.

Okla., Ardmore.—City let contract Ardmore Construction Co., Ardmore, at \$15,359 to pave 3d Ave. S. W. from H to L Sts. with asphalt.

Okla., Holdenville.—Hughes County, Barnard Township, voted \$63,000 bonds to construct roads and bridges. Address County Commissioners.

Okla., Cheyenne.—Roger Mills County will probably vote on \$150,000 bonds to construct roads and bridges. Address County Commsrs.

Okla., Frederick.—City issued \$48,000 bonds for paving. Address The Mayor.

Okla., Miami.—Ottawa County voted \$350,000 bonds to construct roads. Address County Commsrs. (Lately noted to vote.)

Okla., Sapulpa.—Creek County, Bristow Township, will probably vote on bonds to construct roads. Address County Commsrs.

Okla., Tecumseh.—Pottawatomie County is reported to vote on \$450,000 bonds to construct roads and bridges, including bridge across Canadian River. Address County Commissioners.

Tex., Canyon.—Randall County, C. R. Flesher in charge, will grade 50 mi. road and construct concrete culverts; \$66,000 available; Engrs., Hess & Skinner. (\$50,000 bonds lately noted voted.)

Tex., Centerville.—Leon County will not vote on bonds for road construction; C. D. Craig, Judge. (Recent report incorrect.)

Tex., Dallas.—City Commission let contract at \$13,066 to Moberly & Brown, Dallas, to grade street and build earth embankment in connection with construction concrete culvert on Forest Avenue extension. (See Bridges, Culverts, Viaducts.)

Tex., Corpus Christi.—City votes Jan. 2 on \$600,000 bonds to construct 5 mi. paved streets in connection with waterfront improvements. Roy Miller, Mayor. (See Misc. Construction.)

Tex., Dallas.—Dallas County Commsrs. will expend \$40,000 for road improvements.

Tex., El Paso.—El Paso County Commsrs. ordered election for Jan. 4 to vote on \$250,000 bonds to construct roads; L. A. White, County Engr., estimates cost of El Paso-Ysleta road at \$186,000, road from smelter viaduct to Santa Fe tracks at \$52,000, and road from Fort Bliss to Newman at \$15,000; total, \$253,000.

Tex., Houston.—War Department, Washington, D. C., let contract Horton & Horton, Houston, at \$4,000 to pave streets at Camp Logan with shell; Major Schell to supervise construction.

Tex., Palestine.—Anderson County, Montailla Prese, voted bonds to construct roads. Address County Commsrs.

Tex., Paris.—City, C. H. McCulstion, Mayor, let contract to Texas Bitulithic Co., Dallas, Tex., for 5 blocks bitulithic street paving; W. W. Whippley, Engr., Paris; \$20,000 available. (Bonds previously noted voted.)

Tex., Texarkana.—City let contract Kennedy Construction Co. to pave Olive St., from Fourth to Nineteenth Sts., about 15 blocks of street and intersections. (Lately noted.)

Tex., Wheeler.—Wheeler County, Road Dist. No. 2, let contract Smith Bros., Crockett, Tex., at \$35,000 to construct roads.

Va., Petersburg.—City will construct 1000 sq. yds. concrete sidewalks and 1300 lin. ft. concrete curb and gutter; Street Committee receives bids until Dec. 18; R. D. Budd, City Engr. (See Machinery Wanted—Paving.)

Va., Richmond.—City will improve streets; cost \$11,928.1; Chas. E. Bolling, City Engr.

W. Va., Fayetteville.—Fayette County is grading new road over Cotton Hill Moun-

tain; 40,500 cu. yds.; \$33,000 available; Hening & Hagerdorn, Contrs., Mullens, W. Va.; Philip Konrad, Engr., Kanawha Falls, W. Va. (Bids previously noted to be opened Nov. 5.)

SEWER CONSTRUCTION

Fla., West Palm Beach.—Associated Realty Investors, 1289 Broadway, will construct sewer system in connection with residential development. (See Land Development.)

Fla., Zolfo.—City, R. C. Petersen, Clerk, will lay 2500 ft. 10-in. sewer; bids until Dec. 10. Noted in Sept. (See Road and Street Work.)

Okla., Quapaw.—City votes Jan. 1 on \$75,000 bonds to construct sewer and water system. Address The Mayor.

Md., Baltimore.—Baltimore Dry Docks & Ship Building Co. will erect two 1-story steel sheds in rear of southeast corner Cross St. and Key Highway; 20x30 ft. and 12x18 ft., respectively; Trussed Concrete Steel Co., Contr., 1123-24 Munsey Bldg., Baltimore.

SHIPBUILDING PLANTS

Fla., Pensacola.—Kettler-Elliot Erection Co., Chicago, plans to establish shipyards; expects to receive Government contract for constructing 10 steel ships costing \$15,000,000 to \$20,000,000; Paul P. Stewart, Cochran Hotel, Washington, represents the company and wires Manufacturers Record: Will furnish full particulars for later publication.

Fla., Tampa.—Oscar Daniels Co., Woolworth Bldg., New York, D. E. Barter, Gen. Mgr., Tampa, let contract to J. W. Fitzgerald Co., Savannah, Ga., to construct shipways for six 9500-ton vessels. (Oscar Daniels Co. plans for shipyards lately detailed, including \$300,000 expenditure for plant improvements.)

Md., Baltimore.—Henry Smith & Sons Co., 7 E. German St., purchased site 168x244 ft. near new Hanover Street bridge and bounded by Donaldson, Race, Clarkson and Dickman Sts.; erect plant in connection with shipyards.

Md., Elkton.—Ethel Ship Corp. chartered with \$175,000 capital by Clement M. Egner and others.

N. C., Southport.—International Navigation Co., W. H. Garland, Prest., Wilmington, N. C., purchased 600 acre land, including 2-mi. water front on Cape Fear River near Southport, as site for shipyards; will build plant to construct vessels; dredge Price's Creek and widen to 400 ft. for landlocked basin; has let contracts for 5 large cement buildings, cement docks, 100 cottages for skilled laborers, 100-room hotel, bank building, etc.; is reported as having initial contracts for 60 monolithic vessels and 30 wooden vessels. (Previously noted as planning to build shipyards at Wilmington.)

Tex., Harrisburg.—Houston Shipbuilding Co., Arthur Boyce, Prest., Dallas, Tex., leased 5-acre tract on ship channel near Harrisburg on which to build shipyard to construct ocean-going barges.

Va., Alexandria.—American Shipbuilding Corp. chartered with \$10,000,000 capital; Colon H. Livingstone, Prest., 1249 Kenyon N. W., Washington, D. C.; B. W. O'Mrse, V. P.; B. G. Higley, V. P. and Secy.; H. F. Morse, Treas.; each of New York.

TELEPHONE SYSTEMS

Ky., Louisville.—Home Telephone Co. increased capital to \$100,000.

La., New Orleans.—Government let contract Dreher Construction Co., 746 Marquette Bldg., Chicago, at \$15,500 to erect radio buildings; Specification 2649.

Tex., Waco.—Mackay Telegraph Cable Co., J. Hargrave, Supt., Dallas, Tex., will install system for long distance telephone service.

TEXTILE MILLS

N. C., Cherryville—Hosiery.—Gaston Hosiery Co. organized; N. B. Kendrick, Prest.; A. B. Cook, Treas.; has building; ordered 25 knitting machines, sewing machine, electric-power drive, etc.; knit men's half hose. (Lately noted organized with \$100,000 capital.)

N. C., Collettsville—Hosiery.—Collettsville Hosiery Mill, capital \$100,000, incptd. by I. G. Green, J. V. Gregg and Julius Grisett.

N. C., East Durham—Hosiery.—Knit-Well Hosiery Mills, East Main and North Sts., incptd., capital stock \$50,000; M. R. Strickland, Prest.-Mgr.; operate 50 knitting machines at start, 176 needles; purchased all machinery and building material.

N. C., Fayetteville—Cotton Fabrics.—Purlitan Mills Co. advises Manufacturers Record:

Capital stock \$600,000; F. L. Williamson, Prest.; Junius H. Harden, V. P.; L. Banks Williamson, Secy.-Treas.; purchased Holt-Morgan Mills; 10,000 spindles; 580 looms; electric drive. (Supersedes recent item.)

N. C., Greensboro—Hosiery.—Latham Mills organized with \$100,000 capital; J. E. Latham, Prest.; Edw. Latham, V. P.; R. D. Douglas, Secy.-Treas.; W. P. Biddle, Mgr.; has building; install 100 knitting machines, 20 loopers, sewing machine, drying equipment, finishing machinery and paper-box equipment. (Lately noted incptd., etc.)

N. C., High Point—Underwear.—High Point Underwear Mills will be established by C. D. Smith; plans ultimate daily capacity of 12,000 garments.

N. C., High Point—Underwear.—Moffitt Underwear Co., capital \$125,000, incptd. by H. A. Moffitt, John P. Hayworth, D. S. Hayworth and others.

N. C., Marion—Cotton Yarns.—Cross Cotton Mills Co. will enlarge capacity; build \$8000 addition to building; brick, 1-story 78x300-ft. structure; has 3000 spindles; install 400 additional; machinery contract let; rope drive; will add boiler to power plant; present daily capacity 1500 lbs. No. 30; to be increased to 3500 lbs. daily.

Tenn., Covington—Cotton Yarns.—Tipton Cotton Mills will build addition; contemplating change from sheeting to yarn production; has 6500 ring spindles.

Va., Bonsack—Woolen Cloth.—Bonsack Woolen Mills incptd. with \$50,000 capital; F. H. Chamberlain, Prest.-Treas.; V. O. Stewart, V. P.; S. W. Chamberlain, Secy.; has brick buildings; 1080 spindles; 23 looms; no new construction contemplated.

WATER-WORKS

Ala., Talladega.—City, J. W. Vandiver, Mayor, issued \$35,000 for water-works construction.

Fla., Titusville.—City lately incorrectly noted as voting bonds for water-works; J. P. Wilson, City Clerk.

Fla., West Palm Beach.—Associated Realty Investors, 1289 Broadway, plans to construct water system in connection with residential development. (See Land Development.)

Md., Indian Head.—Bureau of Yards and Docks, Navy Dept., Washington, D. C., let contract E. Christman, 416 McClymonds Bldg., Massillon, O., at \$55,685 to construct artesian wells at Naval Proving Grounds. (Mr. Christman lately noted as lowest bidder.)

Mo., Bowling Green.—Bowling Green Mineral Springs Co., C. E. Still, Prest., Kirksville, Mo., is reported having plans prepared for constructing water-works.

Okla., Anthon.—City contemplates constructing water-works. Address The Mayor.

Okla., Jenks.—City will vote on bonds to construct water-works. Address The Mayor.

Okla., Pawhuska.—City will issue \$20,000 bonds to improve water-works. Address The Mayor.

Okla., Quapaw.—City votes Jan. 1 on \$75,000 bonds to construct water and sewer systems. Address The Mayor.

Okla., Yale.—City contemplates improving water system. Address The Mayor.

Tex., Port Arthur.—City will construct 56,000 lin. ft. cast-iron water mains; bids until Dec. 10; John W. Tyron, Mayor. (See Machinery Wanted—Water System.)

Tex., Waco.—Water Commrs. approved plan by N. Werenskiold, 409 Plateau Bldg., Dallas, for underground reinforced concrete-covered reservoir on Trice Hill; capacity 5,000,000 gals.; require 3537 cu. yds. concrete and 148 tons reinforced steel; bids until Dec. 20; E. L. Fulkerson, Secy. and Gen. Mgr. Water Commrs. (See Machinery Wanted—Reservoir Construction.)

WOODWORKING PLANTS

Ala., Mobile—Doors, Sash, etc.—Mobile Builders Equipment Co., Jas. K. Glennon, Prest., 51 N. Royal St., acquired building with machinery already installed; will manufacture doors, sash, blinds and frames; contemplates installing electric power to replace steam. (Lately noted incptd., capital \$50,000.)

Ark., MacRae—Boxes.—MacRae Box Co., capital \$10,000, incptd. by W. B. Beckwith, C. E. Brown, Chas. Chambers and others.

Mo., Kansas City—Staves, etc.—Mid-Continent Stave & Excelsior Co., capital \$20,000, incptd. by S. W. Noggle, B. R. Beall and D. Epling.

N. C., Mt. Olive.—Geo. P. Britt's cotton gin; loss \$2500.

Okla., Tulsa.—Kennedy Building, occupied in part by Western Bank Supply Co.; loss \$10,500.

with T. C. McEachin, Prest.; T. R. Crown, V. P.; C. F. Howell, Secy., Treas. and Mgr.; erecting mill to manufacture lumber, staves, heading, lath, shingles, crating; outbuilding, power and machinery for lumber, staves and heading are ready for operation; will need equipment for lath, shingles and crating. (See Lumber Manufacturing; Machinery Wanted—Shingle Machinery, etc.)

Tex., Brownsville—Woodworking.—Brownsville Wood Co., capital \$1000, incptd. by S. T. Thomas, G. W. Lyle, L. A. Tinnon and others.

Tex., Dallas—Cabinets.—Atlas Cabinet Co., capital \$30,000, incptd. by S. H. Fanning, Wm. G. Breg and W. H. Filppen.

Tex., El Paso—Woodworking.—W. D. Mosley will rebuild woodworking shop in rear of 1019 Elm St., reported burned at loss of \$5000.

Va., Chatham—Cedar Chests.—Hargrave Cedar Chest Co., J. H. Hargrave, Jr., Prest., and J. B. Geyer, Mgr., will erect (by company force) 1-story, 40x140-ft. ordinary-construction building; install woodworking machinery; oil-engine operation; manufacture cedar chests. (Lately noted to rebuild.)

Va., Richmond—Millwork.—Montague Mfg. Co. will erect brick factory building; cost \$10,000.

W. Va., Kenova—Veneer.—Breeze Veneer Co. organized; John T. Breeze, Prest.; Chas. O. Breeze, V. P.; both of Portsmouth, O.; H. T. Breeze, Secy.-Mgr., Kenova; purchased factory formerly owned by Breeze Mfg. Co., Portsmouth, O.; manufacture sawed and sliced veneers, 40,000 ft. daily. (Lately noted incptd., capital \$100,000.)

FIRE DAMAGE

Ala., Athens.—Graves & Davis' planing mill; loss \$25,000.

Ala., Dallas Mills (P. O. Huntsville).—Fred. Whetstone's residence; loss \$3000.

Ala., Gadsden.—John Wildman's residence near Gadsden, owned by Watt T. Brown, Ragland, Ala.

Ala., Mobile.—A. D. Davis Packing Co.'s plant at 105 S. Royal St.; loss \$15,000.

Ala., Montevallo.—W. B. Reynolds' residence.

Ala., Sylacauga.—R. L. Rumsey's saw and planing mill.

Fla., Gabriella.—Turpentine still of J. P. Musselwhite, Orlando, Fla.; loss \$800 to \$900.

Ga., Birdie (R. D. from Grinn).—J. J. Elder & Son's store; \$300 to \$400.

Ga., Columbus.—J. H. Simmerly's store in Jordan City.

Ga., Louisville.—Abbott Manufacturing Co.'s cottonseed house; loss \$25,000.

Ga., Moultrie.—Commercial Building, owned by Commercial Investment Co.; loss \$50,000.

Ga., Savannah.—Stores of Louis Wolf, Jaudon Clothing Co. and Majestic Millinery Co.

Ga., Thunderbolt.—Meldrim Auditorium at Georgia State Industrial College; loss \$7000 to \$10,000; R. R. Wright, Prest.

Ga., Waynesboro.—Buildings of Standard Pharmacy, Vinson's Hardware Co., Braswell Furniture Co. and Burke County Supply Co.; estimated loss \$75,000.

Ky., Corbin.—Cincinnati Bargain Store.

Ky., Hopkinsville.—Minor Cayce's tobacco barn at South Christian.

Ky., Kirksville.—Shirley Cotton's tobacco barn near Kirksville.

Ky., Seco.—Southeast Coal Co.'s coal-mining plant.

La., Convent.—Louis Himmel Planting & Mfg. Co.'s sugar factory on Elvins Plantation, about 6 mi. from Convent; loss \$100,000.

Md., Baltimore.—Seventh and eighth floors of warehouse in rear of 309 N. Howard St., occupied by Pollack Furniture Co. and Wm. G. Dufur.

Md., Federalsburg.—Wm. A. Ryan's residence; loss \$2500.

Md., Mt. Airy.—Dr. J. A. Nice's residence; loss \$7000 to \$8000.

Md., Roland Park.—Thos. J. Dee's residence, 213 Hawthorn Rd.; loss \$20,000.

N. C., Fayetteville.—Parish-house of St. John's Episcopal Church; loss \$5000. Address The Rector.

N. C., Mt. Olive.—Geo. P. Britt's cotton gin; loss \$2500.

Okla., Tulsa.—Kennedy Building, occupied in part by Western Bank Supply Co.; loss \$10,500.

S. C., Charleston.—Storehouse at navy yard; loss \$8000 to \$10,000; Capt. B. C. Bryan, Commandant.

S. C., Edgefield.—M. W. Hudgens' residence; loss \$3000.

S. C., Greenville.—Six mess halls of Thirteenth Division of National Guard at Camp Sevier.

Tenn., Knoxville.—Lewis & Adcock's warehouse.

Tenn., Memphis.—Moore & McFerren's sawmill at 865 N. Front St.; loss \$25,000.

Tenn., Melrose.—Whit B. Smith's barn; loss \$2500.

Tenn., Memphis.—Residence of Robert Galoway, Prest. of Memphis Park Board, 1822 Overton Park Ave.; loss \$50,000.

Tenn., Tullahoma.—James Welch's residence.

Tenn., Beaumont.—S. L. Adams & Co.'s store building.

Tenn., Big Sandy.—S. P. Kay's dwelling; loss \$4000.

Tenn., Childress.—Dr. W. H. Alexander's residence; loss \$10,000.

Tenn., Crockett.—D. C. Francis' residence in West Crockett; loss \$3000.

Tenn., Dallas.—Dwelling occupied by I. E. Davis; loss \$2500.

Tenn., El Paso.—W. D. Mosley's woodworking shop in rear of 1019 Elm St.; loss \$5000.

Tex., Lufkin.—Cotton Belt Lumber Co.'s mill; loss \$5000.

Va., Alexandria.—V. C. Donaldson's store at Seminary Crossroads.

Va., Berkley (Station, Norfolk).—Ferries Company's ferry building; loss \$2500 to \$3000.

Va., City Point.—A. D. Williams' barn, near City Point; loss several thousand dollars.

Va., Lynchburg.—Virginia Collegiate and Industrial School of Morgan College, near Lynchburg; loss about \$50,000.

Va., Richmond.—J. C. Sanders' residence; loss \$4000.

Va., Salem.—Salem Repair Works, W. B. Hall, Mgr.; building was owned by J. P. Garrett of Roanoke.

Va., Warrenton.—John Wess Tyler's residence "Waverly," between Warrenton and Fauquier Springs, owned by W. E. Mathews; loss \$75,000.

Va., Ansted.—Mill Creek Colliery Co.'s power plant; loss \$40,000.

Va., Dunbar.—Dunbar Traction Co.'s electric power plant and barns; loss \$75,000.

Va., Wheeling.—House & Herrmann's department store, loss \$350,000; Bally Bldg., loss \$125,000; West Virginia Printing Co.'s building, loss \$50,000.

COLLAPSED

N. C., Charlotte.—Building owned by Union National Bank; H. M. Victor, Prest.

Tex., Fort Worth.—Chestnut Avenue Christian Church, Rev. J. C. Welch, Pastor, will erect \$20,000 structure; contract let about Jan. 1. (Lately noted.)

Tex., Fort Worth.—College Avenue Baptist Church will erect building; auditorium to seat 1000, Sunday-school department, etc.; 65x10 ft.; cost \$40,000. Address The Pastor.

Va., Abingdon.—Sinking Spring Presbyterian Church will erect Sunday-school annex. Address The Pastor.

Va., Norfolk.—Second Calvary Baptist Church has plans by Harvey Abrams, 345 Arcade Bldg., Norfolk, for building; 50x74 ft.; brick; red tile roof; wood floors; cost \$35,000; steam heat, \$3000; bids opened about Jan. 5. Address Archt. (Lately noted.)

Va., Richmond.—Church of the Holy Comforter, Rev. Wm. E. Cox, Rector, will erect building.

CITY AND COUNTY

Ark., Blytheville—City Hall.—City will probably begin erection of city hall in spring; 80x40 ft.; 2 or 3 stories; brick or stone; fireproof roof; concrete floors; city lighting; J. E. Shane, Archt. and Supt. of Buildings, Paragould, Ark. (Previously noted.)

Ga., Atlanta.—Fire Station.—City, Asa G. Candler, Mayor, will erect fire station in West End; cottage type.

Ky., Louisville—Comfort Station.—City plans erection of underground or surface public comfort stations at 5th and Jefferson Sts. and at Lincoln Park, respectively; cost \$7500; Val P. Collins, Archt., Paul Jones Bldg., Louisville; David Lyman, City Engr.

Md., Westernport—Public Building.—O. H. Bruce, Town Clerk, receives bids until Jan. 7 to erect public building; plans and specifications at office John P. Miller, Mayor.

N. C., Asheville—Home.—Board of Buncombe County Commsrs., W. E. Johnson, Chmn., is considering erecting children's home.

Okla., Bartlesville—Auditorium.—City will soon call election on \$5000 or \$6000 bonds to erect auditorium; 90x200 ft.; seating capacity 2000. Address The Mayor.

Okla., Bigheart—City Hall.—Board of Commissioners, T. E. Gibbons, Prest., will erect city hall; bids opened Dec. 10.

Okla., Miami—Jail.—Ottawa County voted \$50,000 bonds to erect jail; J. A. Walker, County Clerk. (Lately noted.)

W. Va., Glenville—Jail and Jailer's Residence.—Gilmer County Commsrs. opened bids to erect courthouse, jail and jailer's residence; lowest bid in excess of available funds; 2 stories; slow-burning construction; steam heat; gas and electric lights; cost \$4000; A. F. Wysong, Princeton, W. Va. Prescott Construction Co., Parkersburg, W. Va., is lowest bidder at \$67,777. (See Courthouses.)

COURTHOUSES

N. C., Lexington.—Davidson County Commissioners receive bids until Dec. 17 to repair courthouse; will build gallery, install opera chairs, refinish interior and exterior, install steam-heating equipment, etc. (Previously noted.)

W. Va., Glenville.—Gilmer County Commsrs. opened bids to erect courthouse, jail and jailer's residence; lowest bid in excess of available funds; 2 stories; 75x100 ft.; slow-burning construction; tin roof; concrete, tile and wood floors; steam heat; gas and electric lights; cost \$55,000; A. F. Wysong, Archt., Princeton, W. Va. Prescott Construction Co., Parkersburg, W. Va., is lowest bidder at \$67,777. (Lately noted.)

DWELLINGS

Ala., Jasper.—Crandord Mercantile Co. will remodel dwelling.

Ala., Montgomery.—S. B. Marks, Jr., will expend \$5000 to repair dwelling lately noted damaged by fire.

Ala., Piedmont.—Isaac Wheeler will erect 6-room bungalow.

Ark., Ashdown.—C. Locke will erect residence.

Ark., Ashdown.—S. J. Meyer will erect residence; brick; cost \$5000.

Ark., Little Rock.—S. M. Apple will erect dwelling; 2 stories; frame; cost \$3,000.

D. C., Washington.—A. E. Moews will erect store and dwelling. (See Stores.)

D. C., Washington.—Boss & Phelps have plans by Claude N. Norton, 4820 Chappell Lane, Washington, for 2 frame dwellings, 3928-30 McKinley St.; cost \$12,000.

D. C., Washington.—Chas. H. Soran will erect store and dwelling. (See Stores.)

D. C., Washington.—Chas. E. Wire, 1418 H St. N. W., will erect 8 brick dwellings, 1418-22 Crittenden St.; cost \$33,000.

D. C., Washington.—Irvin & Shank, 1410 St. N. W., will develop property known as Glendale, 42d St. to 50th St. N. E.; erect about 200 dwellings and bungalows of various sizes, equipped with plumbing, electric lights, cement cellar, porches, etc.

Fla., West Palm Beach.—Ward G. Foster will probably erect residence.

Fla., St. Petersburg.—R. B. Worthington acquired 5-acre site and will expend \$30,000 to \$40,000 for improvements, including erecting residence.

Ga., Atlanta.—C. H. Milinder will erect two 1-story brick-veneer dwellings; cost \$5000 each.

Ga., Atlanta.—E. Morris has permit to erect dwelling. (See Stores.)

Ga., Fitzgerald.—W. K. Bryant will erect bungalow.

Ga., Statesboro.—W. S. Preetorius will erect dwelling to replace structure lately noted burned.

Ga., Tifton.—H. H. Tift will erect 5 to 10 residences.

Md., St. Helena.—Dundalk Company, Edw. H. Bouton, Prest., Roland Park, Md., has plans by Edward L. Palmer, Jr., 513 N. Charles St., Baltimore, for five hundred 2½-story frame cottages to be occupied by employees of Bethlehem Steel Co., Sparrows Point; hollow-tile construction; contractors estimating are: Chas. L. Stockhausen Co., Gay and Water Sts.; Consolidated Engineering Co., 243-59 Calvert Bldg.; Gladfelter & Chambers, 36th and Roland Ave.; E. G. Turner, 15 E. Fayette St.; Wells Bros. & Co., Grant, Smith & Locker, and Jas. Baden, all of Baltimore; Jas. L. Parsons, Washington, D. C. (Lately noted.)

Mo., Kansas City.—Troost Development Co. will erect 2-story frame dwelling at 1218 E. Forty-ninth Terrace; cost \$3000.

Mo., Kansas City.—J. G. Goodwin will not erect dwelling at present. (Lately noted.)

Mo., Kansas City.—O. M. Martin will erect 1-story stucco-veneer dwelling; cost \$3000.

N. C., Penrose.—Randall W. Everett acquired Everett farm near Penrose and will erect bungalows, barn, etc.; cost \$40,000; construction begun.

Okla., Ada.—C. C. Cain has plans by L. P. Larson, Chickasha, Okla., for residence; 1 story; frame; 38x62 ft.; 8 rooms; Johns-Manville roof; oak floors; brick mantels and porch columns; gas and hot-air heat; cost \$4900.

Okla., Bartlesville.—Allan Haynes is promoting organization of company to erect 100 dwellings. (A. Kaster & Sons, Chicago, lately noted to probably have contract to erect 100 dwellings.)

Okla., Douthat.—F. C. Lewis will erect residence.

Okla., Douthat.—N. E. Metz will erect dwelling.

Okla., Muskogee.—J. J. Hendricks will erect residence, 702 S. Lansing Ave.

Okla., Muskogee.—W. W. Holmes will erect \$2000 residence.

Okla., Muskogee.—J. M. Haverfield will erect 2 dwellings; cost \$5000.

Okla., Muskogee.—A. L. Pittenger will erect dwelling; cost \$2000.

Okla., Oklahoma City.—Nichols-Chandler Co. will erect two 2-story frame dwellings, 210 W. 10th St. and 411 W. 19th St.; cost \$6000 each.

Okla., Oklahoma City.—P. F. Quigley will erect 1-story frame dwelling; cost \$3000.

Okla., Oklahoma City.—Aurelius-Swanson Co. will erect two 2-story dwellings, 1122 and 3214 Classen Blvd.; cost \$4000 each.

Okla., Oklahoma City.—C. E. Huffman will erect three 1-story frame dwellings, 710 and 714 W. 32d St. and 1220 W. 33d St.; also two 2-story frame dwellings, 205 and 209 W. 17th St.; total cost, \$31,750.

Okla., Sulphur.—F. Emmanuel will erect residence; 5 or 6 rooms.

Okla., Tulsa.—Mrs. A. King will erect residence; cost \$800.

Okla., Tulsa.—E. Wyant will erect \$5000 residence.

Okla., Tulsa.—G. M. Cape will erect dwelling; cost \$2000.

Okla., Tulsa.—P. A. Wilson will erect \$2000 residence.

Okla., Tulsa.—A. P. Godach will erect residence; cost \$3000.

Okla., Tulsa.—C. F. Campbell will erect dwelling; cost \$2000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ga., Atlanta.—King Bailey will erect 2-story frame apartment-house; 4 apartments of 3 rooms each; cost \$3500.

Mo., St. Louis.—F. L. Cornwell, La Salle Bldg., postponed erection of apartment and theater building; 9 stories; 175x326 ft.; cost \$800,000; H. J. Harker, Archt., 510 Chestnut St., St. Louis.

N. C., Wilson.—E. S. Taylor will erect apartment-house.

Okla., Tulsa.—J. B. Wilson will erect 2 apartment-houses on West Latimer St.; total cost \$7000.

Okla., Tulsa.—A. L. Farmer will erect store and apartment-house. (See Stores.)

ASSOCIATION AND FRATERNAL

Ark., North Little Rock.—B. P. O. E., No. 1004, is considering erecting \$65,000 lodge building.

Fla., Miami.—Local branch of American Red Cross, E. B. Douglas and Jas. H. Gillman, Building Com., will erect building; cost \$3000.

Ga., Augusta.—Knights of Columbus will erect additional building at Camp Hancock.

Miss., Hattiesburg.—Army Y. M. C. A., Geo. D. Booth, Gen. Secy., will erect 3 additional association buildings at Camp Shelby.

N. C., Charlotte.—Board of Trustees of Oasis Temple, Ancient Arabic Order of Mystic Shrine, will erect temple; Dr. C. E. Cotton, Potentate, Asheville, N. C.

Okla., Blackwell.—R. P. O. E. will erect lodge building.

Okla., Bristow.—Improved Order of Odd Fellows and Modern Woodmen of America plan to erect lodge hall; 2 stories; 2d floor for lodge purposes. (See Miscellaneous Structures.)

Tex., Dallas.—Central State Bank is having plans prepared for remodeling building; upper floors for Odd Fellows' lodgerooms. (See Bank and Office.)

Okla., Sulphur.—Sulphur Chamber of Commerce plans to erect convention hall; 2d floor for lodge purposes. (See Miscellaneous Structures.)

Tex., Waco.—Grand Lodge of Texas, A. F. & A. M., will repair temple; plans include roof, double trussing, etc.; cost about \$3500.

BANK AND OFFICE

Ga., Moultrie.—Commercial Investment Co. will erect building to replace structure noted damaged by fire at loss of \$50,000.

Ga., Savannah.—Commercial Bank, J. H. Entelman, Prest., purchased Provident Bldg. and will remodel; install fixtures, etc.

Ky., Lynch.—United States Coal & Coke Co., J. T. Franklin, Mgr., Benham, Ky., is reported to erect office building.

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In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Oklahoma, Tulsa.—Maple Park Co. will erect 1-story residences; cost \$2000 each.

Oklahoma, Tulsa.—Mrs. Ida Wygand will erect residence; cost \$3150.

Oklahoma, Tulsa.—O. E. Burke will erect 2-story dwelling; cost \$3000.

Oklahoma, Tulsa.—J. J. Conner will erect \$3000 residence.

Oklahoma, Tulsa.—W. A. Reynolds will erect residence; cost \$15,000.

Texas, Electra.—Madorie & Field, 500 K. & K. Bldg., Wichita Falls, Tex., prepared plans for 2-story brick and stucco residence; cost \$20,000; bids opened Dec. 4.

Texas, Petty.—L. Rutherford will erect residence near Petty.

Texas, San Antonio.—C. A. Krausse will erect dwelling in Beacon Hill; cost \$25,000.

Texas, Richmond.—Lara Crump will repair brick dwelling; cost \$3000.

Texas, Richmond.—Mrs. Nannie A. Armitstead's heirs will expend \$3000 to repair brick dwelling.

Texas, Richmond.—C. Browne Pearson will erect brick and stucco residence on Fourth Ave. near Front St.; cost \$3000.

Texas, St. Paul.—Clinch Valley Chemical Extract Co. is reported to build 25 dwellings.

Texas, Moundsville.—Central Coal Mining Co. will erect 10 dwellings at Clifford mine. (See Miscellaneous Structures.)

GOVERNMENT AND STATE

Alabama, Decatur.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Act. Supervising Archt., Washington, D. C., opened bids to erect post office; Samuel M. Plato, Marion, Ind., is lowest bidder at \$47,822. (Lately noted.)

D. C., Washington.—Gunners' Quarters.—Bureau of Yards and Docks, Navy Dept., receives bids until Dec. 17 to construct seaman gunners' quarters at Navy Yard; estimated cost \$150,000. Address F. R. Harris, Chief, for further details; following contractors will estimate: James Stewart & Co.; White Fireproof Constr. Co., both of New York; Dock Contractor Co., Hoboken, N. J.; Henry Weiss Mfg. Co., Atchison, Kas.; W. D. Lovell, Minneapolis, Minn.; International Casement Co., Jamestown, N. Y.; Dawson Constr. Co., Pittsburgh, Pa.; Wells Bros. Constr. Co., Chicago; W. E. Mooney; David Lupton's Sons Co.; Trussed Concrete Steel Co. (main office Detroit), all of Washington; Julian Herndon, Worcester, Mass.; Summer-Sallit Co., Chicago.

Georgia, Augusta.—Hospitals.—War Dept., Washington, D. C., will improve base hospital at Camp Hancock. (See Hospitals.)

Georgia, Augusta.—Knights of Columbus.—Knights of Columbus will erect additional building at Camp Hancock.

La., Grande Isle—Coast Guard Station.—E. P. Bertholf, Captain United States Coast Guard, Washington, D. C., receives bids until Jan. 4 for constructing buildings and accessories for Coast Guard Station No. 214, Barataria Bay; blank proposals, specifications and other information at office District Superintendent, Ninth District, Coast Guard, Galveston, Tex., and United States Coast Guard Headquarters. (Lately noted.)

N. C., Charlotte.—Porter & Boyd, Charlotte, will be in charge of future construction at Camp Greene; probably include mess halls, latrines, bathhouses, stables for 4 machine gun battalions and animals of these units; Major A. B. Kaempfer, Camp Quartermaster.

S. C., Greenville—Mess Halls.—War Dept., Washington, D. C., will erect 6 mess halls in Thirtieth Division of National Guard at Camp Sevier to replace structures noted damaged by fire.

Va., Hampton Roads—Schools.—Bureau of Yards & Docks, Navy Dept., opened bids to erect electrical school and general school at naval operating base; Harwood & Moss, Newport News, Va., are lowest bidders at \$27,750 for work complete, \$149,500 electrical school, \$150,500 general school. (Lately noted.)

HOSPITALS, SANITARIUMS, ETC.

D. C., Washington.—War Dept., N. D. Baker, Secy., will soon let contract to erect 50 additional buildings at Walter Reed Army Hospital; temporary wood construction.

Georgia, Augusta.—War Dept., Washington, D. C., will improve base hospital at Camp Hancock; install plumbing, heating, ventilating, etc.; cost \$25,000.

Texas, Dry Ridge.—J. W. Glover, 422 Aylesford Place, Lexington, Ky., purchased Lakewood Sanatorium and Hotel and is reported to expend \$50,000 to \$100,000 for improvements.

Md., Baltimore.—War Department, Washington, D. C., will erect 18 additional buildings in connection with base hospital at Fort McHenry.

Miss., Gulfport.—City opened bids to erect emergency hospital; J. Griffith & Sons Co., 112 W. Adams St., Chicago, is lowest bidder at \$39,000.

Mo., Bowling Green.—Bowling Green Mineral Springs Co. is reported having plans prepared by Barnett, Haynes & Barnett, 919 Century Bldg., St. Louis, for sanatorium, hotel, etc. (See Hotels.)

Mo., St. Louis.—Missouri Pacific R. R., E. A. Hadley, Chief Engr., St. Louis, is reported having plans prepared by C. H. Wray, Rialto Bldg., St. Louis, for hospital; 6 stories; brick and stone; cost about \$300,000.

Oklahoma, Oklahoma City.—State has plans by Jewel Hicks, State Archt., Durant, Okla., for \$300,000 hospital for medical school. (Previously noted.)

HOTELS

Ky., Dry Ridge.—J. W. Glover, Lexington, Ky., is reported to expend \$50,000 to \$100,000 for improvements to Lakewood Sanatorium and Hotel. (See Hospitals.)

Mo., Bowling Green.—Bowling Green Mineral Springs Co., Dr. C. E. Still, Prest., Kirksville, Mo., is reported having plans prepared by Barnett, Haynes & Barnett, 919 Century Bldg., St. Louis, for sanatorium, hotel, water-works and bottling plant; cost about \$100,000.

Mo., St. Louis.—N. Cole Investment Co. is reported having plans prepared by N. Howard, Century Bldg., St. Louis, for hotel; 3 stories; brick and stone construction.

Oklahoma, Douthat.—McClanahan Hotel Co. will erect hotel; 40 rooms.

Va., Petersburg.—Petersburg Investment Corp. plans to erect 5-story addition to Petersburg Hotel; cost \$100,000; C. M. Robinson, Archt., Times-Dispatch Bldg., Richmond. (Previously noted.)

MISCELLANEOUS

Ark., Warren—Market.—C. C. Malone, Market Co., Incptd. with \$500 capital by C. C. Malone, W. C. Wynne and Ella F. Malone.

D. C., Washington—Clubhouse.—Washington Athletic Club will begin erection of clubhouse in spring; 138x150 ft.; 12 stories; fire proof; concrete frame; slab and tile roof; concrete and tile floors; steam heat; electric lights and elevators; cost \$650,000; Milburn, Heister & Co., Archts., Union Savings Bank Bldg., Washington. (Previously noted.)

Ga., Atlanta.—Georgia Training School for Girls will probably let contract at \$26,689 to L. C. Kalb, Fourth National Bank Bldg., Atlanta, to erect Felton-Sage Dormitory; 2 stories and basement; ordinary construction; brick veneer; asbestos shingles or slate roof; wood floors; steam heat; A. Ten Eyck Brown, Archt., Atlanta. (Previously noted.)

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N. C., Greenville—Mess Halls.—War Dept., Washington, D. C., will erect 6 mess halls in Thirtieth Division of National Guard at Camp Sevier to replace structures noted damaged by fire.

Tex., San Antonio—Bowling Alley.—San Antonio Family Bowling Club will erect bowling alley; cost \$2000.

Tex., San Antonio—Cafe.—Manhattan Cafe, John Anthony, Mgr., will expend \$20,000 to remodel and enlarge cafe; also install refrigerating plant, redecorate, etc.

Tex., Vernon—Clubhouse.—Country Club, L. G. Hawkins, Secy., has plans by Madorie & Field, 500 K. & K. Bldg., Wichita Falls, Tex., to erect clubhouse at Condon Springs; 1 story; brick; 50x60 ft.; 10 rooms; composition shingle roof; electric fixtures; oak floors; steam heat; cost \$12,000.

Va., Berkley (Station, Norfolk)—Ferry house.—Ferries Company, Mr. Brittingham, Prest., will rebuild ferry building noted damaged by fire at loss of \$2500 to \$3000.

W. Va., Moundsville—Bathhouse, etc.—Central Coal Mining Co. will erect bathhouse at Clifford mine; fireproof; 24x40 ft.; accommodations for 300 men; install water system to all houses from underground cistern; also erect 10 additional houses.

RAILWAY STATIONS, SHEDS, ETC.

Fla., West Palm Beach.—Florida East Coast Ry., E. Ben. Carter, Chief Engr., St. Augustine, will erect depot at Esteroes of South Palm Beach.

Oklahoma, Henryetta.—Missouri, Oklahoma & Gulf Ry., G. N. Toops, Supervisor M. W. & S., Muskogee, Okla., will rebuild passenger station lately noted damaged by fire.

Oklahoma, Oklahoma City.—St. Louis & San Francisco Ry. Co. indefinitely postponed erection of station; 146x139 ft.; 2 stories and basement; reinforced concrete; gravel roof; reinforced concrete floors; cost \$300,000; Lebenbaum, Marx & Vigeant, Archts., Chicago. (Previously noted.)

Tex., Coryell.—Coryell School Board has plans by Ross & Cason, Waco, for school

Oklahoma, Oneta.—Railroad Commission directed Missouri, Kansas City & Texas Ry., L. F. Lonnblad, Ch. Engr., Dallas, to erect depot.

Va., Norfolk.—New York, Philadelphia & Norfolk Ry., Alexander C. Shand, Chief Engr., Philadelphia, will establish terminal on Chesapeake Bay, opposite Cape Charles.

W. Va., Dunbar.—Traction Company will rebuild barns and electric-power plant reported burned at loss of \$75,000.

SCHOOLS

Ala., Altoona.—City indefinitely postponed election on \$10,000 school bonds. Address The Mayor. (Lately noted.)

Ala., Eufaula.—City will erect school on South Side. Address The Mayor.

Ala., Montgomery.—School Board will erect 8-room school on Jefferson Davis Ave.; plans in progress.

D. C., Deanwood (R. D. from Washington). Board of Commrs., Room 509, District Bldg., Washington, receives bids until Dec. 21 to erect addition and make alterations in Deanwood School, No. 152, on Whittingham Place; blank forms of proposal, plans and specifications at office Chief Clerk, Engineer Department, Room 427, District Bldg., Washington; Louis Brownlow, John G. D. Knight, W. Gwynn Gardner, Commrs.

D. C., Woodburn.—Dist. Commrs., Washington, D. C., received no bids to erect addition to school building No. 101; construction probably by Snowden Ashford, municipal architect, with day labor and sub-contracts. (Lately noted to open bids Dec. 4.)

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Mo., St. Louis.—F. L. Cornwell, La Salle Bldg., postponed erection of theater and apartment building lately noted; plans by H. J. Harker, 810 Chestnut St., St. Louis, call for building 175x326 ft.; 9 stories; cost \$800,000.

Okla., Elk City.—Massey & Yoder are reported to erect \$20,000 theater building.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

D. C., Washington.—Chris. Heurich let contract to remodel store and apartment-house. (See Stores.)

D. C., Washington.—Home Savings Bank let contract to Wm. P. Lipscomb & Co., 1405 F St. N. W., Washington, to erect addition for bank and living quarters; Wagaman & Roy, Archts., Washington. (See Bank and Office.)

ASSOCIATION AND FRATERNAL

Tenn., Millington.—Y. M. C. A., S. M. Jackson, Fin. Secy., let contract to D. M. Crawford & Co., Memphis, to erect "Red Triangle Hut" for aviators and students at Park Field, Millington; frame; 37½x135 ft.; 1½ stories; permanent writing tables on 3 sides; electric lights; 2 stove heaters; cost \$500.

BANK AND OFFICE

D. C., Washington.—Home Savings Bank let contract to Wm. P. Lipscomb & Co., 1405 F St. N. W., Washington, to erect addition to building; upper floor for apartments; reinforced concrete frame, columns, etc.; slag roof; tile and reinforced concrete floors; steam heat to cost \$5000; remove elevator to new section, etc.; Wagaman & Roy, Archts., Washington. (Previously noted.)

N. C., Southport.—International Navigation Co., W. H. Garland, Prest., Wilmington, N. C., let contract to erect bank building in connection with construction of shipyards.

CHURCHES

Ga., Milledgeville.—Baptist Church let contract to J. W. Marchman, Milledgeville, to enlarge building; cost \$10,300, including heating equipment and additional seats.

Tex., Atlanta.—Methodist Church, J. E. King, Secy., let contract to L. M. Miller, Vickery, Tex., to erect 2-story building; 60x80 ft.; face and common brick; metallic roof, concrete and yellow pine floors; gas and electric fixtures; gas heat; cost \$19,000; Sparger & Peters, Archts., Bonham, Tex. (Lately noted.)

DWELLINGS

Ala., Montgomery.—A. C. Greson, Montgomery, has contract to erect 2 residences on Capitol Heights; cost \$4000 each.

Ga., Augusta.—Charles Houston let contract to G. W. Greene, Williston, S. C., to erect residence; stucco; hollow tile; 7 rooms; tiled baths; asphalt shingles; furnace heat; cost \$4500; Bleckley & Irvin, Archts., Augusta. (Lately noted.)

Ga., Augusta.—Eugene Verdery let contract to C. B. Holley, Augusta, to repair burned residence; will rebuild second floor; stucco; slate roof; hardwood floors and trim; cost \$12,000; E. L. Robertson, Archt., Johnson Bldg., Augusta.

N. C., Greensboro.—V. C. Lewis, 504 S. Mendenhall St., let contract to J. R. Truitt, Greensboro, to erect residence; 2 stories; 6 rooms; juniper shingle roof. (Lately noted.)

N. C., Southport.—International Navigation Co., W. H. Garland, Prest., Wilmington, N. C., let contract to build 100 cottages for laborers in connection with shipyard construction.

Okla., Tulsa.—W. D. Blacker, 220-21 Iowa Bldg., let contract to A. W. Hyde, to erect residence; 45x32 ft.; frame and brick; tile roof; wood and tile floors; electric lights; cost \$7500; steam heat, \$420; Thompson & Blacker, Archts., Tulsa. Address owner.

Tex., McKinney.—Mrs. J. L. White let contract to L. M. Miller, Vickery, Tex., to erect residence; 2 stories; 10 rooms; face and common brick; composition roof; terrazzo and oak and pine floors; gas and electric fixtures; hot air heat; cost \$12,000; Sparger & Peters, Archts., Bonham, Tex.

Va., Portsmouth.—Wm. C. Johnson, 1613 Barron St., has plans by and let contract to Calvin Johnson & Son, 1905 McDaniel St., Portsmouth, to erect bungalow; 25x37 ft.; slate roof; rift pine floors; cost \$2400. Address contractors. (Lately noted.)

WAREHOUSES

Md., Baltimore.—J. Morgenstern & Sons, 622 W. Baltimore St., will remodel 4-story warehouse at 404-06 W. German St.

S. C., Pamlico.—Farmers' Tobacco Warehouse Co., incptd., with \$5000 capital by L. B. Coleman, N. B. Finkela, Hyman, S. C., and W. W. Coleman, Pamlico.

school; also at \$250 to C. W. Brown, Birmingham, to build partition and other improvements to Oak Grove school.

Ala., New Market.—Madison County Board of Public Instruction, Huntsville, Ala., let contract to A. M. Booth, Huntsville, to erect school; 2 stories; 37x71 ft. and 24x40 ft.; brick walls; stuc partitions; asphalt shingle roof; wood floors; stoves; lamps; cost \$8500; all materials purchased. (Lately noted.)

Fla., Jacksonville.—Board of Public Instruction let contract to erect proposed Highway school on Lackawanna Ave.

Fla., Miami.—Dade County Board of Public Instruction, R. E. Hall, Supt., let contract to Halsema-Buckland-Fitchner Co., Jacksonville, at \$35,015 to erect North End school; 190x129 ft.; reinforced concrete and Denison interlocking hollow tile; Spanish tile roof; concrete floors overlaid with wood; gas-steam heat to cost \$1500; city electric lights; 12 classrooms and kindergarten; A. E. Lewis, Archt., Real Estate Bldg., Miami; also let contract to W. A. Otter, Miami, at \$13,651 to erect 6-room addition to Riverside school and to W. E. Martin, Miami; Edw. A. Nolan, Archt., Miami; at \$17,781 to erect 2-room additions to Buena Vista and Highland Park schools; A. C. Gelger, Archt., Miami. (Lately noted.)

Fla., Moultrie.—Colquitt County Board of Education let contract to G. W. Milligan, Moultrie, to erect school in Riverside; 2 stories; brick; auditorium on second floor.

Tex., Austin.—State let contract to J. Wattinger, Austin, to erect dormitory and classrooms for Institute for Deaf, Dumb & Blind; 50x100 ft.; 3 stories; reinforced concrete frame; brick and tile walls; built-up roof; cement and pine floors; radiation and piping only for heating system; cement walls; cost \$30,000; W. E. Kitchum, Archt., 718 Littlefield Bldg., Austin; concrete frame completed; brick, tile and millwork bought. (Previously noted.)

Tex., Gatesville.—State Juvenile Training School Trustees let contract to Munn Construction Co., Dallas, for fireproofing, electric wiring, steam heating and plumbing for 2 dormitories; cost \$20,000; W. G. Clarkson, Archt., First Nat'l. Bank Bldg., Fort Worth. (Lately noted.)

STORES

Ala., Tuscumbia.—W. E. Aycock let contract to A. B. Todd, Tuscumbia, to erect store building.

Ala., Montgomery.—Steiner-Lobman Dry Goods Co. let contract to James Hodgson, Montgomery, to remodel Sellman & Marx's store building; brick; cost \$5000.

D. C., Washington.—Chris. Heurich has plans by A. P. Clark, Jr., 706-09 Equitable Bldg., and let contract to Jas. T. Kenyon, 817 14th St. N. W., both of Washington, to remodel store and apartment-house, 1743 Pennsylvania Ave.; cost \$6500.

WAREHOUSES

Tex., El Campo.—I. Weaver let contract to erect warehouse; brick; 100-ft. frontage.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Agricultural Equipment.—Chas. W. Blyth, Xasama, Northern Rhodesia, South Africa. To represent manufacturers of agricultural equipment.

Architect.—Building Committee, Baptist Church, Franklin, N. C.—Correspondence with architects in reference to plans for \$20,000 church building.

Asphalt.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—\$300,000 lbs. asphalt paving in oil barrels; 300,000 lbs. refined No. 1 Trinidad asphalt; 300,000 lbs. Val der Travers asphalt; schedule 1610; delivery Norfolk.

Asphalt, Fire Clay, Etc.—Bureau Supplies and Accounts, Navy Department, Washington, D. C.—Bids until Dec. 18, for delivering asphalt, fire clay, sand and silica, and furnishing labor to install three tanks at Navy Yard, Norfolk. Apply for proposals or to Supply Officer, Navy Yard, Norfolk, or to Bureau.

Automobiles.—Chas. W. Blyth, Xasama, Northern Rhodesia, South Africa.—To represent manufacturers of low-price motor cars arranged to connect belt to car engine and operate agricultural machinery.

Barrels (Slack).—Dan W. Hardwick, Loris, S. C.—Addresses of manufacturers of barrels for white potatoes.

Boilers.—Machinery Exchange, Bienville and David Sts., 4201, New Orleans, La.—Prices on boilers; view to agency.

Boiler (Return-Tubular; Portable).—Porter & Moore Co., 421 Water St. and 414 Division St., Norfolk, Va.—Prices on second-hand 60 to 80-H. P. return tubular portable boiler; economic style.

Boilers.—Marshall Haney, Lydia, Va.—Prices on boilers. (See Mining Machinery.)

Boiler.—Maysville Central Garage Co., O. L. Bartlett, Mgr., 112 Market St., Maysville, Ky.—Prices on boiler for heating.

Building Materials.—Cherry Branch Coal Co., B. M. Williams, Prest., Evarts, Ky.—Prices on building materials.—See Mining Machinery (Coal).

Building Materials, etc.—Excelsior Tool & Machine Co., 30th to 32d St., Ridge to Jefferson Ave., East St. Louis, Ill.—Bids on building materials, etc.; is extending plant and adding to foundry building a steel extension brick and metal sash siding; also large core oven and 10-ton and 2-ton electric cranes; will erect 2-story fireproof pattern storage, pattern shop, stockroom and garage building.

Cars (Mine).—Blackstone Consolidated Coal Co., Okmulgee, Okla.—Prices on mine cars.—See Mining Machinery.

Cars.—Marshall Haney, Lydia, Va.—Prices on cars. (See Mining Machinery.)

Core Oven.—Excelsior Tool & Machine Co., East St. Louis, Ill.—Prices on large core oven.—See Building Materials, etc.

Cement (Portland).—Duval County Commissioners, L. L. Meggs, Chrmn., Jacksonville, Fla.—Bids until Dec. 21 to furnish 220 bbls. Portland cement.

Clay.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids to furnish 300 tons air-floated fire clay, schedule 1613; delivery Norfolk.

Cotton Yarn Machinery.—Jonesboro Yarn Mills, Jonesboro, Tenn.—Prices on Whin spinning frames, 210 spindles each; Whin heavy gravity; 3-in. gauge, 7-in. traverse, 2-in. ring; 1-story creel, ½-in. whirl, 7-cylinder.

Cranes (Locomotive).—Machinery Exchange Co., Bienville and David Sts., 4201, New Orleans, La.—Prices, view to agency, on locomotive cranes.

Cranes (Electric).—Excelsior Tool & Machine Co., East St. Louis, Ill.—Prices on 10-ton and 2-ton electric cranes.—See Building Materials, etc.

Crusher (Gyratory).—R. P. Johnson, Wytheville, Va.—No. 5 gyratory crusher; 10x20-in. and 11x26-in. jaw crusher; with elevators and screens; quote condition and best dealers' price.

Crating Machinery.—See Lath Machinery, East Coast Mfg. Co.

Dust Protectors.—Hasson, Holt & Nance, Morristown, Tenn.—Addresses of manufacturers of dust protectors; such as used by employees of cement factories, mills, etc.

Electric Cable and Wire.—Bureau Supplies and Accounts, Navy Department, Washington, D. C.—Bids until Dec. 18 for delivering electrical cable and wire at naval station, New Orleans; apply for proposals to Supply Officer, Naval Station, New Orleans, or to Bureau.

Engines.—Marshall Haney, Lydia, Va.—Prices on engines. (See Mining Machinery.)

Engines (Hoisting; Haulage).—Blackstone Consolidated Coal Co., Okmulgee, Okla.—Prices on hoisting and haulage engines.—See Mining Machinery.

Engines (Hoisting).—Machinery Exchange Co., Bienville and David Sts., 4201, New Orleans, La.—Prices, view to agency, on hoisting engines.

Engines (Crude Oil).—Machinery Exchange Co., Bienville and David Sts., 4201, New Orleans, La.—Prices, view to agency, on good internal combustion crude-oil engine.

Fan (Mine).—Utility Gas Coal Co., Pineville, Ky.—Prices on electric-driven fan. (See Mining Equipment.)

Feed-mill Equipment (Velvet Bean).—Atlas Machinery & Supply Co., 1 S. 20th St., Birmingham, Ala.—Data and jobbers' prices on mill machinery for grinding and hulling velvet beans.

Generator Sets (Motor).—Bureau Yards and Docks, Navy Department, Washington, D. C.—Bids until Dec. 17 for furnishing and delivering two 300 K. W. motor generator sets and switchboards at navy-yard, New York; four 300 K. W. motor generator sets and switchboards at navy-yard, Philadelphia; four 300 K. W. motor generator sets and switchboards at navy-yard, Norfolk, and three 500 K. W. motor generator sets at navy-yard, Washington; drawings and specification (No. 2711) on application to Bureau or to commandant of navy-yard or naval station named.

Heater (Water).—Treasury Dept., Supervising Archt.'s Office, Washington, D. C.—Bids on water heater. (See Shower Bath, etc.)

Hoist (Mine).—Utility Gas Coal Co., Pineville, Ky.—Prices on electric-driven hoist. (See Mining Machinery.)

Jetty Construction.—United States Engr. Office, Masonic Temple, Jacksonville, Fla.—Bids until Jan. 5 to raise outer portions of jetties at entrance of St. John's River, and furnish 62,000 tons stone; information on application.

Lath Machinery.—See Shingle Machinery, East Coast Mfg. Co.

Levee Construction.—Comms. Caddo Levee Dist., Shreveport, La.—Bids until Dec. 28 on about 650,000 cu. yds. levee work, Caddo Parish, Red River, right bank; Briarfield to Cottonwood Bayou Levee, contents 102,000 cu. yds.; Cottonwood Bayou to Hurricane Bluff Levee, contents 106,000 cu. yds.; Hurricane Bluff to Cairo Levee, contents 97,000 cu. yds.; Cairo to Fire Point Levee, contents 97,000 cu. yds.; Fire Point to Pickett Levee, contents 116,000 cu. yds.

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cu. yds.; Caldwell Point to Tones Bayou Levee, contents 120,000 cu. yds.; all riverside enlargement, with Fire Point to Pickett Levee work, riverside enlargement and new levee; additional information on application to State Engrs., 213 New Orleans Court Bldg., New Orleans, or to undersigned; W. A. Kerley, Secy.; W. F. Taylor, Prest.

Levee Construction.—Comms. Shawnee Creek Drainage Dist., J. Richard Garstang, Secy., Chamois, Mo.—Bids until Jan. 5 to construct 60,000 cu. yds. earth levee; plans, specifications and further information from H. E. Steinmann, Engr., Chamois.

Locomotive.—Blackstone Consolidated Coal Co., W. H. Wigton, Mgr., Okmulgee, Okla.—Haulage engines.—See Mining Machinery.

Manufactured Products.—M. R. Nathani, Natha's Bldg., Zanzibar, East Africa.—To represent American manufacturers.

Match Machinery.—G. R. Parker, Wadesboro, N. C.—Data on manufacture of matches, including laws pertaining to same; also prices on machinery.

Metal Sash.—See Building Materials, etc.—Excelsior Tool & Machine Co.

Mining Equipment (Coal).—Utility Gas Coal Co., W. R. Morrison, Gen. Mgr., Pine-

Pattern-shop Equipment.—See Building Materials, etc.—Excelsior Tool & Machine Co.

Paving.—Street Committee, Petersburg, Va.—Bids until Dec. 18 to construct 1000 sq. yds. concrete sidewalks and 1200 lin. ft. concrete curb and gutter; city to furnish cement, stone and sand; specifications on file with R. D. Budd, City Engr.

Picks and Shovels.—See Mining Machinery.—Marshall Haney.

Pine.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids to furnish 32,000 ft. common No. 2 white pine and 32,000 ft. New England pine planers, scheduled 1623, delivery Brooklyn, N. Y.

Pipe, Bolts, Nuts, Rivets, etc.—Panama Canal, A. L. Flint, General Purchasing Officer, Washington, D. C.—Bids until Dec. 28 to furnish galvanized pipe, bolts, nuts, rivets, files, posthole diggers, hoes, detonators, paper, memorandum books, carbon paper and lumber; blanks, etc., relating to circular (No. 1189) obtainable at this office or offices Asst. Purchasing Agents, 24 State St., New York; Audubon Bldg., New Orleans, and Fort Mason, San Francisco; also from United States Engr. Offices in principal cities throughout United States.

Pipe Machinery (Smoking; Corn Cob).—Henry A. Moore, care Moore Milling Co.,

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ADDRESS: MANUFACTURERS RECORD, BALTIMORE, MD.

ville, Ky.—Prices on electric-driven fan, pumps and hoist.

Mining Machinery.—Marshall Haney, Mining Engr., Lydia, Va.—Prices on picks, shovels, cars, pumps, boilers, engines and kaolin-handling machinery.

Mining Machinery (Coal).—Cherry Branch Coal Co., B. M. Williams, Prest., Evarts, Ky.—Prices on mining machinery, pumps and building material.

Mining Machinery (Coal).—Blackstone Consolidated Coal Co., W. H. Wigton, Mgr., Okmulgee, Okla.—Bids on hoisting and haulage engines; ropes; mine cars; "T" rails; dumps; screens; conveyors; booms; mine and railroad track scales.

Motor (Electric).—Maysville Central Garage Co., O. L. Bartlett, Mgr., Maysville, Ky.—Prices on 3-5 H. P. electric motor.

Motors (Electric).—Robt. C. Nifong, Engr. for Nupro Refining Co., Box 450, Henryetta, Okla.—Prices on 1 to 10 H. P. A. C. 220-volt 3-phase 60-cycle motors.

Nitrocellulose Machinery, Etc.—Corsicana Mfg. & Bottling Co., 407 S. Ninth St., Corsicana, Tex.—Data relative to manufacture of nitrocellulose, including markets, etc., also prices on machinery for manufacturing.

Oil Machinery (Peanut).—Howard Curry, care of Seaboard Air Line Ry. Co., 204 W. Bay St., Jacksonville, Fla.—Correspondence with manufacturers of peanut-oil machinery.

Columbia, Tenn.—Data and prices on machinery to manufacture corn cob pipes.

Presses (Scrap Metal).—Canners' Supply Co., 113 S. State St., Jackson, Miss.—Prices on 6 motor-power baling presses for baling empty tin can scrap in blocks of 100 lbs.

Pumps.—Cherry Branch Coal Co., B. M. Williams, Prest., Evarts, Ky.—Prices on pumps.—See Mining Machinery.

Pumps.—Jennings Coal Co., Peter Connally, Mgr., Spottsville, Ky.—Prices on pumps.

Pumps.—Marshall Haney, Lydia, Va.—Prices on pumps. (See Mining Machinery.)

Pumps (Mine).—Utility Gas Coal Co., Pineville, Ky.—Prices on electric-driven pumps. (See Mining Machinery.)

Rails.—Blackstone Consolidated Coal Co., Okmulgee, Okla.—Prices on rails.—See Mining Machinery.

Reservoir Construction.—Water Comms., E. L. Fulkerson, Secy., and Gen. Mgr., Waco, Tex.—Bids until Dec. 20 to construct 5,000,000-gal. reinforced concrete-covered reservoir on Trice Hill; require 3537 cu. yds. concrete and 148 tons reinforced steel; plans, specifications and form of contract on file with Secy, and obtainable from N. Werenkiold, Engr., 1409 Flateau Bldg., Dallas, for \$25.

[Continued on Page 82.]

TRUTH—

The Antidote to Poisoned Falsehoods

"The Russian people have been poisoned by the very same falsehoods that have kept the German people in the dark, and the poison has been administered by the very same hands. The only possible antidote is the truth. It cannot be uttered too plainly or too often."

—President Wilson, December 4, 1917.

Truth and Plain Speaking by the Manufacturers Record

Extracts from a few of the numerous letters received from our readers will bear testimony to the fact that the MANUFACTURERS RECORD has been speaking plainly and often in regard to the war and has vigorously championed the cause of America against the sinister influence of the rulers of Germany and their vassals, both here and abroad.

Your editorials on the war situation are the strongest, most thoughtful and fearless of any of the newspaper writers, and undoubtedly are resulting in much good to the cause of the United States.—Louis T. Moore, Secretary, Davis-Moore Paint Co., Wilmington, N. C.

I know of no publication in America which writes so vigorous, virile editorial matter, and I believe it would be a splendid education for every American to read your war editorials and comments.—W. H. Upson, The Upson Company, Lockport, N. Y.

I am a boy; my father subscribes to a number of well-known magazines, among them the MANUFACTURERS RECORD. Although a boy I get more good and true patriotism out of it than any other.—Howard T. Knight, Stephenson, Miss.

You are doing a wonderful work for Christianity, Civilization and America. America is awakening and will save the world's civilization, but her agony has not yet fallen.—H. M. Bacon, California Counties Oil Co., San Francisco, Cal.

You are right; fight the devil with fire. I know that you have been critical about some of the things you have written, but you can't place it too strongly for me.—H. W. Taylor, Branford Lumber & Shingle Co., Live Oak, Fla.

Not only do these articles show the spirit of true Americanism and humanity, but the suggestions made and thoughts brought out should appeal to every thinking man and woman in the United States.—Guy A. Myers, Southern Bell Telephone & Telegraph Co., Charlotte, N. C.

The strong position taken relative to the justice of the war on the German savage represents the thought of the most loyal, intelligent people, and your journal is to be commended for its untiring efforts in support of the Government.—S. S. Parham, Vice-President, Carolina Bagging Co., Henderson, N. C.

There is no other newspaper or magazine in the country, in my opinion, whose editorials can compare with yours for true patriotism.—H. C. Atwater, Civil Engineer, New York, N. Y.

You are opening the eyes of the people and bringing before them the real conditions. Such articles as these are injecting patriotism into every reader and will be of much assistance to the nation in helping "beat the Huns."—J. E. Gilbert, Owensboro, Ky.

I am indebted to the MANUFACTURERS RECORD for enlightenment on the German menace, and want to spread the doctrine among a few of my friends.—Guy E. Thompson, Manager Bond Department, Bankers Trust Company, Little Rock, Ark.

You say what I have felt ever since the invasion of Belgium by the Huns; but I could not express my feeling as you can.—G. A. Petteway, President, Petteway Investment Co., Tampa, Fla.

I wish it were possible for your editorials to be read in every home in this country.—J. B. Ryland, Manager, Sidney Spitzer & Company, Montgomery, Ala.

I am very much interested in your writing on the war and the forcible way that you handle the "Huns," damn them.—Capt. H. T. Clark, Jacksonville, Fla.

Read the Manufacturers Record and help spread the TRUTH—\$5.00 a year.

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Dr. Hillis' Picture of Germany's War Plans and Her Atrocities in Belgium and France—\$4.00 a hundred.

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La., Springfield—(School).—\$3500 of 5 per cent. bonds Livingston Parish School Dist. have been purchased by W. L. Slayton & Co., Toledo, Ohio.

Md., Elkton—(Road).—\$10,000 of 5 per cent. 20-year Cecil County bonds have been purchased at 102 and interest by Townsend & Son, Baltimore.

Md., Rising Sun—(Light).—\$5000 of 5 per cent. bonds have been purchased by local parties at par and interest. Address The Mayor.

Miss., Biloxi—(Street).—Gulf Coast Life Insurance Co. is reported to have purchased \$5000 of bonds. Address The Mayor.

Miss., Clarksdale—(Street).—\$100,000 of 5½ per cent. bonds have been purchased at \$1200 premium by Crompton & Co., St. Louis.

Miss., Clinton—(Artesian Well).—\$6000 of 6 per cent. 17-20-year bonds have been purchased at par and cost of printing by the Mississippi College. Address The Mayor.

Miss., Ellissville—(Street).—\$3000 of bonds defeated.

Miss., Laurel—(Street Certificates of Indebtedness).—Ordinance has been prepared providing for the issuing of \$35,000 of 6 per cent. 17-year certificates of indebtedness on account of street improvements. T. G. McCallum is Mayor, and D. F. Gardiner, City Clerk.

Miss., Vaiden—(Road).—\$50,000 of 6 per cent. bonds Beat 5, Carroll County, have been purchased at a premium by J. A. Weeks, V. P. Bank of West, at West, Miss.

Mo., Nevada—(Fire Truck).—\$7000 of 5 per cent. bonds have been purchased by the First National Bank of Nevada.

N. C., Asheville—(Street).—Bids will be received until noon Dec. 19 by Board of City Comms., F. L. Conder, Secy. and Treas., for \$127,000 of 5 per cent. \$1000 denomination bonds, dated Dec. 1, 1917, and maturing Dec. 1, 1919 to 1936, inclusive.

N. C., Edenton—(Street).—Ordinance has been prepared authorizing the issuing of \$28,000 of 6 per cent. 20-year bonds. J. R. McMullan is Town Clerk.

N. C., Farmville—(Water, Light, Sewer, Refunding).—All bids received Dec. 4 for \$23,000 of 6 per cent. \$1000 denomination bonds, dated Oct. 1, 1917, and maturing Oct. 1, 1919 to 1927, inclusive, were rejected. W. G. Sheppard is Mayor.

N. C., Greenville—(Funding, Water).—Bids will be received until 7:30 P. M. Dec. 14 for the following \$1000 denomination bonds, dated Dec. 1, 1917: \$104,000 General Funding bonds, maturing 1919 to 1939, inclusive; \$73,000 Assessment Funding bonds, maturing 1919 to 1939, inclusive; \$100,000 Water bonds, maturing 1918 to 1957, inclusive. Albion Dunn is Mayor. (This notice is in lieu of notice in Record bearing date Dec. 6, the day of sale and amount of bonds having been changed. Further particulars will be found in Proposals Department).

N. C., Monroe—(Funding, Street).—Bids will be received until noon Dec. 14 for \$75,000 funding and \$164,000 street improvement 6 per cent. \$1000 denomination bonds, maturing 1931 for street and 1940 for funding bonds. George S. Lee, Jr. is City Treas.

N. C., North Wilkesboro—(Funding).—Bids will be received until Dec. 20 by S. L. Pardee, Town Clerk, for \$5,000 of 6 per cent. bonds.

N. C., Rutherfordton—(Highway).—Election is to be held in Townships in Rutherford County Jan. 19 to vote on \$11,850 of bonds as follows: Cool Springs, \$5613; Rutherfordton, \$4276; Green Hill, \$1172; Chimney Rock, \$789. G. F. Watson is Chrmn. Board of County Comms., and J. D. Hull, Cashier.

N. C., Wilmington—(Funding, Improvement).—Bids will be received until 10 A. M. Dec. 19 for \$75,000 of funding and \$25,000 of improvement 5 per cent. bonds. W. D. McCaig is Councilman in charge of finances.

N. C., Wilson—(School).—\$5000 of 6 per cent. 20-year \$600 denomination bonds School Dist. No. 3, Oldfields Township, have been purchased at par by Hanchett Bond Co., Chicago.

N. C., Wilson—(School).—\$5000 of 6 per cent. 20-year bonds Rock Bridge School Dist. No. 3, Wilson County, have been purchased at par by H. B. Craven, representing the Hanchett Bond Co., Chicago, Ill.

Okla., Ardmore—(Street).—\$21,657.25 of 6 per cent. bonds have been purchased at par by the Ardmore Construction Co., Ardmore.

Okla., Bartlesville—(Hospital).—All bids received Dec. 3 for \$50,000 of 5 per cent. 10-25-year bonds were rejected. John Johnstone is City Clerk.

Okla., Bartlesville—(Auditorium).—Election

is soon to be held to vote on \$5000 or \$6000 bonds. Address The Mayor.

Okla., Bristow—(Water, Sewer, City Hall).—\$6000 water and sewer and \$20,000 city hall bonds recently sold have been approved by the Atty. Gen.

Okla., Cheyenne—(Road, Bridge).—Election will probably be held in Roger Mills County to vote on \$150,000 of bonds. Address County Commissioners.

Okla., Frederick—(Paving).—\$48,000 of paving bonds are reported issued by City Council. Address The Mayor.

Okla., Jenks—(Waterworks).—Election is soon to be held to vote on bonds. Address The Mayor.

Okla., Miami—(Road, Jail).—\$350,000 of road and \$50,000 of jail Ottawa County bonds are voted. Address County Comms.

Okla., Quapaw—(Water, Sewer).—Election is to be held Jan. 1 to vote on \$75,000 of bonds. Address The Mayor.

Okla., Seminole—(Light).—Election is to be held Dec. 14 to vote on \$5000 of bonds. Address The Mayor.

Okla., Woodward—(Light, Water, Sewer).—Election held Dec. 10 to vote on \$20,000 electric-light, \$7000 water and \$5000 sewer bonds. Address The Mayor.

Okla., Woodward—(Road, Bridge).—\$675,000 Woodward County bonds defeated.

Tex., Austin.—Bonds approved by Atty. Gen.: \$2000 of 5 per cent. 5-10-year San Jacinto County Common School Dist. No. 16; \$3000 Dist. No. 5, and \$1500 Dist. No. 6 Freestone County common school dist.

Tex., Boerne—(Road).—\$80,000 of 5 per cent. 20-40-year \$1000 denomination bonds were authorized by Road Dist. No. 3, Kendall County. Of the amount \$29,000 have been purchased at par and accrued interest by local parties. The remaining \$51,000 will be sold at any time at private sale. J. W. Lawhorn is County Judge.

Tex., Canyon—(Road, Bridge).—\$50,000 of Randall County bonds recently voted are 40-year 5½ per cent. Denomination \$1000. C. R. Flesher is County Judge.

Tex., Centerville—(Road).—Regarding report that petition is being circulated in Leon County asking that an election be held to vote on \$250,000 of bonds, a letter to the Manufacturers Record says: "We are not voting any bond issue." C. D. Craig is County Judge.

Tex., Columbus—(Road).—Election is to be held in Colorado County Dec. 18 to vote on \$75,000 of bonds. Address County Comms.

Tex., Corpus Christi—(Bay-front Improvement).—Election is to be held Jan. 2 to vote on \$600,000 of 5 per cent bonds. Roy Miller is Mayor.

Tex., Corsicana—(Road).—\$200,000 of Navarro County Road Improvement bonds have been purchased by McElwraith & Rogers, Corsicana.

Tex., El Paso—(Road).—Election is to be held in El Paso County and city Jan. 4 to vote on \$250,000 of not exceeding 5 per cent. 20-year bonds. E. B. McElwraith is County Judge.

Tex., Fort Worth—(School).—\$400,000 of bonds to be voted on Dec. 11 are 25-40-year 5 per cent. Denomination \$1000. J. C. Griffith is Prest. Bd. of Trustees Independent School Dist. of Fort Worth.

Tex., Madisonville—(Road).—\$100,000 of 5 per cent. 1-40-year \$500 denomination bonds Justice Precinct No. 1, Madison County, dated Jan. 1, 1918, are voted. Date for opening bids not yet decided. Address J. M. Brownlee, Madisonville.

Tex., Mineral Wells—(Water).—\$69,000 of 5 per cent. bonds have been purchased by J. L. Arlt of Austin, Tex., for Chicago parties.

Tex., Orange—(School).—Election is soon to be held to vote on \$250 of bonds school

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A. H. S. POST, President

F. G. BOYCE, Jr., Vice-President

MANUFACTURERS RECORD.

Dist. No. 14, Orange County. Address School Board.

Tex., Paris—(Street).—\$20,000 of 5 per cent. 10-30-year bonds recently voted have been sold. It is reported. Ed. H. McCulston is Mayor.

W. Va., Point Pleasant—(Road).—\$20,000 of Lewis District, Mason County, bonds have been purchased by the Workmen's Compensation Department of West Virginia.

FINANCIAL NOTES

The German Savings Bank of Baltimore, Chas. Spilman, Pres., has changed its name to the Citizens' Savings Bank. This is the second bank in the city to drop the word "German" from its title, the first having

been the German-American Bank, which changed its name to the American Bank.

For more than a year the Citizens & Southern Bank of Savannah has had a branch at Macon, Ga., and this new venture has been most successful. The branch recently occupied its newly-equipped quarters in the building occupied by its predecessor, the American National Bank of Macon. The outer walls are all that remain of the former banking-room and the interior of the structure has been enlarged and improved throughout, while the exterior has likewise been transformed, making it one of the handsomest edifices in the city. Mills B. Lane of Savannah is Pres., and George B. Clarke of Macon is Vice-Pres. in charge. The Citizens & Southern Bank also has branch at Augusta, as well as a branch in Savannah, the home city of the parent bank.

MACHINERY, PROPOSALS AND SUPPLIES WANTED.

[Continued from Page 79.]

Road Materials.—Duval County Comr., L. L. Meggs, Chrmn., Jacksonville, Fla.—Bids until Dec. 21 to furnish 220 bbls. Portland cement, 2 car loads sand, 3 car loads 5-in. granite stone.

Safes.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Prices on No. 1 pay officers' safes, schedule 162, delivery Brooklyn, N. Y.

Sand.—Duval County Comr., L. L. Meggs, Chrmn., Jacksonville, Fla.—Bids until Dec. 21 to furnish 220 bbls. Portland cement.

Scales (Railroad Track, etc.).—Blackstone Consolidated Coal Co., Okmulgee, Okla.—Prices on mine and railroad track scales.—See Mining Machinery.

Screens.—Blackstone Consolidated Coal Co., Okmulgee, Okla.—Prices on screens.—See Mining Machinery.

Sea-wall Construction, etc.—City of Petersburg, Fla., G. B. Shepard, Director of Finance.—Bids until Dec. 15 to construct concrete slab seawall or solid concrete seawall along water front; also Cameron septic tank system and pier; separate bids on each; plans and specifications on file with Mr. Shepard. (Date postponed from Nov. 28 lately noted.)

Signs and Markers (Highway).—Bankhead National Highway Assn., J. A. Rountree, Secy., 1021 Brown-Marx Bldg., Birmingham, Ala.—Data and prices, from manufacturers and contractors, on highway signs and markers of unique design, to be placed along the 500-mi. distance of Atlanta, Birmingham and Memphis division of Bankhead National Highway.

Silos and Tanks.—Chas. W. Blyth, Xasama, Northern Rhodesia, South Africa.—To represent manufacturers of silos and cattle and sheep dipping tanks made in sections of iron or steel plates to be bolted to local timber.

Shingle Machinery, etc.—East Coast Mfg. Co., Wilmington, N. C.—Interested in prices on machinery for manufacturing lath, shingles and crating.

Shovel (Steam).—Bert L. Sylar, 1121 Steam Bldg., Chattanooga, Tenn.—Prices on steam shovel; large coal stripping shovel with 70 or 80-ft. boom; state years used, condition and location.

Shower Bath, etc.—Treasury Dept., Supervising Archt's Office, Washington, D. C.—Bids until Jan. 3 for shower bath, water heater, etc., in U. S. Courthouse and Post-office, Tallahassee, Fla.; copies of drawings and specifications obtainable at Archt's and office of custodian, Tallahassee.

Steel "I" Beams.—J. C. Miller, Contractor and Builder, Campbellsville, Ky.—Prices on four 30-in. "I" beams, 180 lbs., and five 26-in. "I" beams, 150 lbs.; new or second-hand.

Stone (Granite).—Duval County Comr., L. L. Meggs, Chrmn., Jacksonville, Fla.—Bids until Dec. 21 to furnish 3 car loads 5-in. granite stone.

Tanks Installation.—See Asphalt, Fire Clay, Etc.—Bureau Supplies & Accounts, Navy Dept.

Tanks (Gasoline Storage).—Robt. C. Nifong, Engr., Nupro Refining Co., Box 450, Henryetta, Okla.—Prices on pressure type gasoline storage tanks.

Tractors.—Chas. W. Blyth, Xasama, Northern Rhodesia, South Africa.—To represent manufacturers of agricultural and transport tractors of simple construction and of low price.

Water System.—City of Port Arthur, Tex., John W. Tryon, Mayor.—Bids until Dec. 10 to construct 56,000 lin. ft. cast-iron water mains; specifications, etc., from L. A. Witter, City Clerk.

Wire (Telephone).—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—500,000 ft. twisted telephone wire, schedule 1619, delivery Brooklyn, N. Y.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Hanceville.—Charter is filed at Montgomery for the Stouts Mountain & Hanceville Railroad Co. to build a line from Hanceville to Stouts Mountain, about 6 mi. Address Chas. F. Wheelock, Birmingham, Ala.

Fla., Arcadia.—Atlantic Coast Line's branch from Arcadia to the aviation camp site, will be 7 mi. long and will be built by company's forces. J. E. Willoughby, Wilmington, N. C., is Chief Engr.

Fla., Tampa.—Construction of Tampa Southern Railroad will be from Orient, on the Atlantic Coast Line near Tampa, to Palmetto, Fla., 35½ mi. Contract let to Baxter Morrison of Inverness, Fla., and E. W. Parker of Tampa. D. C. Gillett of Tampa is Prest. J. E. Willoughby, Chief Engr. Atlantic Coast Line, Wilmington, N. C., will have charge of construction.

La., Mansfield.—Construction is to begin immediately. It is reported, on 14 mi. of railroad for the Frost-Johnson Lumber Co., contract being let to J. S. Moore of Lufkin, Tex.

Md., Admiral.—Press report that the Pennsylvania Railroad was authorized to build a double-track line from Bowie to Admiral, about 6 mi., is denied by the company. It was already empowered to build from Odenton to Admiral, 1½ mi., which line is operated as a siding.

Md., Baltimore.—Pennsylvania R. R. will four-track its present double-track line from Wilmington, Del., to Washington, D. C., via Baltimore, 10½ mi. Money for the work is appropriated and construction awaits only labor and material market conditions to permit it, but it will be done as soon as possible. A. C. Shand, Broad-Street Station, Philadelphia, is Ch. Engr.

Md., Frederick.—Hagerstown & Frederick Railway Co., contemplates improvements to the Chambersburg, Greencastle & Waynesboro Railway running from Highfield, Md., to Chambersburg, Pa., which it has acquired. E. L. Coblenz of Frederick is Prest.

Mo., St. Louis.—Gulf, St. Louis & Vancouver Railroad Co., capital \$1,000,000, has been chartered in Delaware to build and operate lines "outside of Delaware." Incorporators: M. L. Rogers, L. A. Irwin and Harry W. Davis, all of Wilmington, the latter being secretary and treasurer of the Delaware Registration Trust Co.

N. C., Durham.—Norfolk & Western Railway, it is reported, will build a branch from Willardville Station to mines of the Granville Iron Corporation, lying partly in Durham and partly in Granville County. J. E. Crawford, Roanoke, Va., is Chief Engr.

Tenn., Harriman.—Morgan & Fennessy Railway Co., which plans building a 50-mi. extension from Nemo, Tenn., into Fennessy County, has amended charter to increase capital stock from \$200,000 to \$400,000. F. H. Envright, Harriman, Tenn., is V.-P. and General Manager.

Tenn., Knoxville.—Southern Ry., according to local report, expects to soon resume surveying preliminary to double-tracking its line all the way from Knoxville, Tenn., to Asheville, N. C. About 70 mi. remain to be finished. W. H. Wells, Washington, D. C., is Ch. Engr. of Constr.

Tex., Dallas.—List & Gifford Construction Co. of Kansas City, Mo., has contract on Missouri, Kansas & Texas Railway for separation of grades in North Dallas, including 1½ mi. of new track and 6 bridges. F. Ringer, 702 Katy Bldg., Dallas, is Chief Engr.

Tex., Newton.—Gulf & Northern Railway has completed line from Newton to Wiergate, 14½ mi.

Va., Norfolk.—New York, Philadelphia & Norfolk Railway Co. has bought 500 acres of land near East Ocean View with a frontage of 3000 feet on Chesapeake Bay, and will develop new terminal to accommodate its transfer line to and from Cape Charles. M. W. Clement, Cape Charles, Va., is Supt., and Wm. A. Patton, Broad Street Station, Philadelphia, Pa., is Prest. The company says that no definite plans have yet been made.

Va., Richmond.—Richmond-Seven Pines Ry. Co., capital \$50,000, has been chartered. Thos. B. Love of Fairfax, Va., is Prest. and Robt. B. Campbell of Richmond is Secy. and Treas. Will take over Richmond & Rappahannock River Ry., it is reported.

W. Va., Charleston.—Charleston-Dunbar Traction Co.'s extension will be from Dunbar to Polka, 10 mi., via Kanawha, and will include one bridge. Date of bids not yet announced. Fred. Paul Grosscup is Prest.; Paul B. Grosscup, V.-P., and E. W. Alexander, Secy. and Chief Engr.; all at Charleston.

W. Va., Charleston.—Chesapeake & Ohio Ry. Co. denies that it proposes extensive improvements on the South Side water front at Charleston. This refers to recent press report.

STREET RAILWAYS

Ga., Brunswick.—City & Suburban Railway Co., it is reported, will build an extension to serve several industries. F. D. N. Strachan is Prest.

Va., Norfolk.—Virginia Ry. & Power Co. is reported surveying for extension to Pig Point. T. S. Wheelwright, Richmond, Va., is Prest.



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IT may be possible to lay a brick pavement with cement filler that will always be a credit to its builder, but even the best municipal engineers are constantly getting into trouble with that combination. Cement filler attempts the almost impossible feat of restraining the brick from expanding in hot weather.

Shrewdly planned lateral and transverse expansion-joints at the proper intervals and angles may serve to prevent the expansion of the pavement from thrusting the curbing out of line, or from causing trouble at manholes, railway tracks, etc. The placing of such expansion-joints, however, is far from an exact science; moreover, the joints themselves are sources of trouble, for they must necessarily be wide inasmuch as they must account for the expansion of a considerable area of bricks.

In cold weather such expansion-joints are so wide that they form a groove across the pavement, exposing the edges of the brick, which crumble under traffic.

If the foundation settles ever so slightly, the brick monolith does not settle with it, but remains suspended in the air. Hollow sounds when vehicles pass over such areas betray the existence of the set-

tling, but there is no help for it, and the engineer can only wait helplessly until some day the insufficiently supported brick breaks down under a heavy load and makes a wide, ugly crack. If there is a curve in the road the expansion problem is particularly tricky, and frequently the most elaborate management of expansion-joints will not suffice.

The simplest escape from all these difficulties is to abandon the use of cement filler altogether and use Paving Pitch. *Every joint is then an expansion-joint.* There are no stresses or strains at any point. When the pavement is completed the engineer knows that it will play no tricks on him, but will proceed to give him good service for twenty or thirty years without any further care or expense.

The best paving pitch is Barrett's Paving Pitch. Look for the label on the barrels.

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EFFORTS MADE TO HOLD NEGROES IN THE SOUTH.

Improved Conditions of Living and Pay for Work Inaugurated in Mississippi—Demoralized by Prosperity in Some Sections.

Jackson, Miss., December 6—[Special.]—Facing the gravest farm-labor problem in the history of the State, and one that affects vitally the State's efforts to produce food crops sufficient for its own use and to feed thousands in other less-favored sections, Mississippi is making an earnest attempt to hold her negroes in the rural sections by helping them to farm more expertly and by making more generous contracts with them.

In certain sections of the State this year food crops have rotted in the fields because there was no labor available to gather them, and the drive for increased production next year will be hindered by the experience of many farmers who planted food crops last spring, only to have them go to waste or to be sacrificed as feed for stock when they might have kept many human beings well-fed if they could have been gathered.

One of the most important movements toward holding the negroes is that which is furnishing them with county farm demonstration agents of their own race. Seven counties have employed these agents, and district agent is in charge of them. The counties are Simpson, Hinds, Yazoo, Bolivar, Sunflower, Grenada and Lincoln. The director of these agents is stationed at Jackson. Their efforts have met with universal success, and the negro exodus has been sharply checked where they are at work.

They follow the same general lines as the white agents, teaching better farming and helping to provide good markets for farm products. The white agents cooperate in every possible way with the negroes, and the State and district white agents have done everything in their power to make the efforts of the negroes successful.

Thus far no counties have made appropriations for the employment of negro agents, but funds have been

raised by progressive citizens, and these, supplemented by money from the Federal Department of Agriculture, have given the work an excellent impetus, although it is entirely new.

E. R. Lloyd, director of the agricultural extension work in the State, is advising white farmers to give employment to their negroes during the fall and winter at good wages so as to keep them from being tempted north by the glib-tongued labor agents, who usually take the fall season, when work is slack in the South, as the best time for their operations.

An abundance of good-roads work will furnish steady employment for many negroes during the winter and will help to hold them. In the Delta section, however, it is not lack of work, but super-abundance of money, that is making the negro idle and restless. Their cotton brought such enormous prices this fall that many of them refuse to work at all.

While Mississippi is just now realizing the full seriousness of her labor problem, there is ample evidence that the State is going about its solution in a sensible manner. Helping the negro farmers, checking persecution by "dollar deputies" and grafting justices of the peace, raising wages and making fairer contracts are the chief remedies used thus far.

The problem will affect the State's production of foodstuffs next year more than any other single element.

equally in as good condition as the cotton and corn farmers. Not only are the farmers out of debt, but they are now on a cash basis, bringing great prosperity to every branch of trade and industry in this section.

Turkey Crop Pays Off Tennessee Farmer's Mortgage.

Columbia, Tenn., December 6—[Special.]—When one lone farmer gets for one five-deck wagonload of turkeys from his place sufficient revenue to pay off the mortgage on the farm, that may be construed as individual prosperity, to say the least. Nevertheless, this is the record of a farmer in a middle Tennessee county. The occasion was a call from the produce dealers to bring in Thanksgiving birds. The farmer placed 220 head of live turkeys in his wagon and drove eight miles to market. The weights on this load were figured at the opening market price—23 cents per pound—and the farmer went home with a \$700 check in his pocket.

Texas School Children Hit on Plan to Help Win the War.

Houston, Tex., December 8—[Special.]—By working after hours on school days and by working on Saturday holidays, picking "left over" cotton in scattering patches around the school, the pupils of Alief school, near Houston, have picked a bale of cotton, which has been turned over to the local Red Cross Chapter.

"We have been reading that everyone should do something to help our soldiers, and as we didn't have the money to give, we got permission to pick the cotton," said one of the pupils. "It wasn't much, but it was all that we could do to help win the war."

As a matter of fact the bale, which weighs 625 pounds, will bring more than \$200, including the price of the seed, at the prevailing market, but the Red Cross will try to sell it at a premium.



General view showing roof in course of construction



**Walter
Concretile**

FIREPROOF

Impervious to sparks and flying embers. Cannot take fire or communicate fire under any circumstance.

Reduces fire insurance.

WATERPROOF

Not effected by atmospheric conditions: does not shrink, warp, curl, or deteriorate. Rain and snow proof. Adds to value of property.

Start a "Walter Concretile" Plant

THE KING OF ROOFS

AN OPPORTUNITY FOR BUSINESS BUILDERS

There is a market in every county in this country for Walter Concretile. The establishment of a plant requires the investment of very little money, profits considered. The opportunity awaits the man who can supply the capital and who has the ability to manufacture and market a simple, worthy product that finds ready sale.

These roofing tile have been manufactured and used for years in Europe. The product is not new, but we have improved and patented machines for its rapid and cheap production. Its manufacture is an operation that is simple. The equipment required is not expensive.

From reports received from plants now in operation, the average cost of manufacturing tile for 100 square feet of roof is \$2.75. The product competes in quality and beauty with the best clay tile, and

you can see how it would compete in price. The plants now manufacturing Walter Concretile are making money.

We sell you complete equipment for starting the business. You can add to your equipment as your business grows. We don't sell territory, but we establish only one plant in a locality. We help you get started. We make sure that you turn out a first-class product and we help you create a market for it.

Walter Concretile Machines are Not Sold on a Royalty Basis. They are Sold Outright.
Only one Plant in a Locality.

Send today for our booklet on the manufacture of concrete roofing tile.

WALTER CONCRETE MACHINERY COMPANY

414-16 Saks Building

INDIANAPOLIS, INDIANA

Introducing To Manufacturers Record Readers "Advertising Headquarters Of The Southeast"

THE economic value of advertising need not be argued to the intelligent business men who read the Manufacturers Record.

They know from personal experience or from observation the part which efficient advertising plays in business building.

Advertising has demonstrated its right to exist in a thousand tests; its service to humanity is beginning to be generally appreciated, and its future holds the promise of ever-increasing usefulness.

By reducing to a minimum the cost of distributing and selling goods, advertising serves all the people all the time. It is the greatest single factor in the conservation of man power, so essential to the welfare of the nations now fighting for the preservation of human liberty.

Our organization was formed to make the highest type of advertising service conveniently available to the manufacturers and merchants of the Southeast. We are especially devoting our energies to the development of that section which lies east and south of a line drawn from Norfolk to Mobile.

A four years' record of service to the most important advertisers of this part of the country, which has been so efficient as to thoroughly satisfy them and lead to our continued employment in almost every case, is our assurance that other firms which have not as yet engaged us would find it profitable to let us act as their advertising counselors.

To consideration of the advertising and selling problems of any firm in this section we can bring the sympathetic knowledge so essential to the solution of these. We are thoroughly conversant with all conditions under which business is done in the Southeast. Almost every place at all easy of access in the above-described territory may be reached by us in a night's ride or but little more.

The specialists we employ know merchandising and are familiar with all forms of advertising. Each has had extended and successful experience in selling goods of many kinds. However, before making definite recommendations on any account they insist on the opportunity to devote special study to its peculiar problems. Each and every advertising campaign we outline is the result of such study, interpreted by previous contact with similar lines of business.

We are equipped to give complete service. Every part of an advertising campaign can be directed by us. We have experienced plan men, capable copy writers and talented artists. Our connection with engraving and printing houses are such that we can secure for our clients booklets, catalogs and follow-up material, of the best grade and at reasonable prices. We gladly render partial service to advertisers who already have satisfactory arrangements for the handling of portions of their selling campaigns.

In immediately succeeding issues of the Manufacturers Record we shall try to explain somewhat more in detail just what our service consists of, giving typical examples of what it has accomplished for our clients and for the business interests of the Southeast. Meanwhile, we welcome inquiry from firms or individuals interested in knowing more of what we have done and what we can do. Write us freely and without the slightest obligation. We are yours to command for any information along these lines that you care to request.

The Thomas Advertising Service

ADVERTISING HEADQUARTERS OF THE SOUTHEAST

Heard National Bank Building,

Jacksonville, Florida

Jefferson Thomas, Pres. and Gen. Mgr.

Tampa Office, Stovall Building, Clyde Glenn, Manager

Member Southern Council of Association of American Advertising Agencies. Accredited by the American Newspaper Publishers' Association, the Agricultural Publishers' Association, the National Periodical Association and other publishers' organizations. The only advertising agency southeast of Atlanta with the recognition and co-operation of these bodies.

This is the first of four advertisements. The second in the series will appear next week.

DIRECTORY

ARCHITECTS ENGINEERS CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

<p>MILBURN, HEISTER & CO. Architects WASHINGTON, D. C.</p> <p>Government Landscape Architect—1910-1916.</p> <p>GEORGE BURNAP Landscape Architect Washington, D. C.</p> <p>PARKS SUBDIVISIONS ESTATES</p> <p>G. L. MEAKER Contracting Engineer. Hot Galvanizing Equipment for Shipping Yards, Steel Mills and Industrial Plants. 2 Knapp Building JOLIET, ILLINOIS</p> <p>HENRY EXALL ELROD Mem. Am. Soc. M. E. Mem. Am. Soc. C. E. Mem. Am. Water-Works Assn. Roads, Pavements, Municipal Works, Reports. Interurban Bldg. DALLAS, TEXAS</p> <p>DANIEL B. LUTEN Designing and Consulting Engineer Reinforced Concrete Bridges exclusively. Associate Engineers in each State. INDIANAPOLIS, IND.</p> <p>WILLIAM C. SPIKER, C. E. Mem. Am. Soc. Civ. Engrs. Consulting Engineer Reinforced Concrete and Structural Steel Buildings and Bridges. 1408-9 Candler Bldg. ATLANTA, GA.</p> <p>C. W. HUMPHREY Consulting Engineer Designing—Financing—Construction—Operation. Electric Lighting, Power, Railway, Transmission, Hydro-Electric and Industrial Properties. 327 South La Salle Street CHICAGO</p> <p>CHARLES T. MAIN Member A. S. M. E. Textile Mills WATER POWER DEVELOPMENTS 201 Devonshire Street BOSTON</p> <p>Concrete-Steel Engineering Co. Designing and Supervising Engineers Concrete-Steel Bridges Concrete-Steel Tanks Park Row Bldg. NEW YORK</p> <p>FREELAND-KLYCE ENG'G CO. Consulting Engineers Concrete and Steel Structures NASHVILLE, TENN.</p> <p>F. ERNEST BRACKETT Civil and Mining Engineers Coal Mines, Water Works, Sewerage, Industrial Plants, Surveys and Reports. Third National Bank Bldg. CUMBERLAND, MD.</p> <p>HEDRICK & HEDRICK Consulting Engineers Bridges, Viaducts and other Structures of Steel and Reinforced Concrete. Interstate Building KANSAS CITY, MO.</p> <p>W. C. O'BRIANT Millwright General Mill Construction. Saw Mills & Specialty Randolph Bldg. MEMPHIS, TENN.</p>	<p>THE ARNOLD COMPANY Engineers—Constructors Electrical—Civil—Mechanical 105 South La Salle St CHICAGO 111 Broadway NEW YORK</p> <p>DAY & ZIMMERMANN, Inc. Engineers Layout, Design and Construction of Industrial Plants and Public Service Properties. Examinations, Reports and Valuations. Highway Engineering. Operation of Public Service Properties. PHILADELPHIA</p> <p>HUGH L. COOPER & CO. General Hydraulic Engineering Including the Design, Financing, Construction and Management of Hydro-Electric Power Plants. 101 Park Avenue NEW YORK</p> <p>MORRIS KNOWLES M. Am. Soc. C. E. Mem. Am. Soc. M. E. Hydraulic and Sanitary Engineer Investigations and Valuations for Purchase or Financing Water and Sewer Systems, Water Power, Drainage and Irrigation Systems. 1200 B. F. Jones Law Bldg. PITTSBURGH, PA.</p> <p>W. E. MOORE & COMPANY Engineers Reports, Designs, Supervision. Public Service Properties. Power Developments, Distribution and Application. Union Bank Building PITTSBURGH, PA.</p> <p>W. M. GARDNER H. N. HOWE, Mem. Am. Soc. C. E. Assoc. Mem. A. M. Soc. C. E. GARDNER & HOWE Engineers Designs, Estimates and Supervision; Concrete Bridges, Viaducts, Buildings, and other Structures. Porter Building MEMPHIS, TENN.</p> <p>C. L. BROOKS ENGINEERING CO. Packing-House and Cold-Storage Engineers. We help you raise the capital, build the plant and run it successfully. We make a specialty of Southern plants. Main Office—MOULTRIE, GA. MINNEAPOLIS, MINN. ATLANTA, GA. 736 Plymouth Bldg. 711 Empire Bldg.</p>	<p>J. M. CLARK, Mem. A. I. M. E. C. E. KREBS, Mem. A. I. M. E. CLARK & KREBS Civil and Mining Engineers and Geologists Coal, Oil and Gas Railroad and Municipal Engineering CHARLESTON, W. VA.</p> <p>DOW & SMITH Chemical Engineers Consulting Paving Engineers A. W. Dow, Ph.B. F. P. Smith, Ph.B. Mem. Am. Inst. Ch. Engrs. Mem. Am. Soc. Civ. Engrs. Asphalt, Bitumens, Paving, Hydraulic Cement, Engineering Materials 181-3 E. 23d Street NEW YORK</p> <p>GILBERT C. WHITE, C. E. M. Am. Soc. C. E. M. Am. W. W. Assoc. Consulting Engineer Water Works Streets DURHAM, N. C.</p> <p>WILLIAM SPEED Civil Engineer and Landscape Architect Chief Engineer Louisville-Nashville Division Dixie Highway. Starks Building LOUISVILLE, KY.</p> <p>EDWIN WORTHAM, E. E. Consulting Engineer Industrial Plants, Factories, Municipal Work of all kinds, Steam and Electric Railways, Public Utilities, Reports, Valuations, Supervision, Franchises Drawn, Properties Operated. Suite 47, Allison Bldg. RICHMOND, VA.</p> <p>TUCKER & LAXTON Contracting Engineers Filters, Concrete Work, Hydro-Electric and Steam Electric Construction CHARLOTTE, NORTH CAROLINA</p> <p>SPRAY ENGINEERING COMPANY Engineers Manufacturers For Spray Cooling Ponds, Irrigation Systems, Aerating Reservoirs, Odor Condensers, Gas Washers. 93 Federal Street BOSTON, MASS.</p> <p>SAVANNAH ENGINEERING AND CONSTRUCTION CO. SAVANNAH, GEORGIA Engineers and Constructors</p> <p>FRANCIS R. WELLER, M. Am. Soc. C. E. Consulting Engineer Hydro-Electric and Steam Power Plants, Reports, Appraisals, Designs, Construction, Properties Operated Hibbs Building WASHINGTON, D. C.</p> <p>ARTHUR G. MCKEE & CO. Engineers and Contractors Power Plants, Industrial Buildings, Metallurgical Plants, Blast Furnaces, Storage Bins, Coal-Handling Equipment. Design—Construction CLEVELAND, OHIO.</p> <p>C. W. LANE & CO., Inc. General Contractors Steam and Electric Railroads, Water Powers Developed. City Water-Works, Sanitary Sewers, Street Paving, Concrete Buildings, General Offices, Healey Building ATLANTA, GA.</p> <p>THE S. R. SMYTHE COMPANY Engineers Contractors PITTSBURGH, PA. Steel Works, Rolling Mills, Blast Furnaces, Hot Blast Stoves, Furnaces for All Purposes. Operated with Producer Gas, Natural Gas, Oil or Pulverized Coal, Coke Ovens. Gas Producers, Hand Operated or Mechanical. The Value of the Era. SCHILD SLIDING GAS AND AIR REVERSING VALVES</p>
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DIRECTORY**ARCHITECTS****ENGINEERS****CONTRACTORS**

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

Ford, Bacon & Davis,
Engineers,

115 Broadway, New York

New Orleans

San Francisco

J. E. SIRRINE*Mill Architect and Engineer***SPECIALTY:**

Textile Mills and Water Power Developments

GREENVILLE, S. C.

SCOFIELD ENGINEERING COMPANY*Consulting, Designing and Supervising Engineers*

TEXTILE—MECHANICAL—ELECTRICAL—CIVIL

Commercial Trust Building

PHILADELPHIA

ALLEN-SGALES ENGINEERING COMPANYINCORPORATED*Engineers and Contractors*

Water Works

Power Plants

209 Church Street

Heating and Ventilation

NASHVILLE, TENN.

BLODGETT CONSTRUCTION COMPANY*Contracting Engineers*

Steel, Wooden and Concrete Bridges, Pneumatic and Open Sinking
Railroad Construction and Steam Shovel Work
KANSAS CITY, MO. SHREVEPORT, LA. MONTGOMERY, ALA.

Dredging

RIVER AND HARBOR IMPROVEMENTS.

Hydraulic Fills. Land Drainage. Dock Construction.
GLOBE DREDGING CO.

SAVANNAH, GA.

FULLER ENGINEERING COMPANY*Designing and Constructing Engineers.*

Portland Cement, Rotary Kiln and Hydrated Lime Plants.
Pulverized Coal Installations for Industrial Furnaces.

Main Office:
ALLENTOWN, PA.50 Church Street. NEW YORK
Farmers Bank Bldg. PITTSBURGH
McCormick Building, CHICAGO**STONE & WEBSTER**

Industrial Plants and Buildings, Steam Power Stations, Water Power Developments,
Transmission Lines, Gas Plants, Electric and Steam Railroad Work, Substations.

NEW YORK

BOSTON

CHICAGO

BRETT ENGINEERING & CONTRACTING CO.*Engineers—Contractors*

Reclamation of Southern Swamp Land

Home Office—WILSON, N. C.

327-333 Monticello Arcade, NORFOLK, VA.

THE J. G. WHITE COMPANIES*Engineers—Contractors—Financiers—Managers*

43 EXCHANGE PLACE, NEW YORK

London

Chicago

H. M. BYLLESBY & COMPANY*Engineers and Managers*

Purchase, Finance, Design, Construct and Operate Electric Light, Gas,
Street Railway and Water Power Properties. Utility Securities Bought
and Sold. Examinations and Reports.

NEW YORK

CHICAGO

TACOMA

WASHINGTON

THE WEST CONSTRUCTION CO.*Street Paving Contractors*

CHATTANOOGA, TENN.

HENRY J. COX AND COMPANY

Assoc. Mem. Am. Soc. C. E.

Engineers and Contractors

Railroads, Highways, Drainage and Levees

ALEXANDRIA

LOUISIANA

R. K. STEWART & SON*General Contractors*

Concrete Construction, Waterworks, Buildings.

SOUTH BOSTON, VA.

SANDERSON & PORTER*Engineers*

CHICAGO

72 West Adams St.

NEW YORK

52 William Street

SAN FRANCISCO

Nevada Bank Bldg.

JOHN B. GUERNSEY AND COMPANYINCORPORATED

CONSULTING—ENGINEERS—OPERATING

BLAST FURNACES
IRON ORE MINES
FERRO-ALLOYS
COAL MINES—COKERECONSTRUCTION
REORGANIZATION
RE-FINANCING
OPERATING

OFFICES AND LABORATORY—ROANOKE, VIRGINIA

JOHN B. GUERNSEY AND COMPANY

THE J. B. McCRARY COMPANY*Engineers* ATLANTA, GEORGIA**MUNICIPAL IMPROVEMENTS**

Southern work only. Have built over half of the Water, Light and Sewer
Systems in Georgia and Alabama. We Design—Finance—Superintend.
Bonds Purchased.

DIRECTORY

CHEMISTS **GEOLOGISTS**

CHEMICAL ENGINEERS
TESTING LABORATORIES

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

SAMUEL P. SADTLER & SON
Consulting and Research Chemists.
Analyses and Reports made in all Branches of Industrial Chemistry. Raw Materials and Waste Products studied and reported upon. Experimental work.
Office and Laboratory, 210 S. 13th Street; Experimental Laboratory, Chestnut Hill, PHILADELPHIA, PA.

RICHARD K. MEADE & CO.
Mem. A. M. S. M. E. Mem. Am. I. Ch. E.
Chemical and Industrial Engineers
Chemical, Cement, Lime and Fertilizers Plants Designed and Improved. Reports on Industrial Propositions. Technical Research. Analyses, Tests and Inspection of Engineering Materials. Law Building BALTIMORE, MD.

L. T. Emory, C. E. R. H. Eisenbrey, Chem. E.
EMORY & EISENBREY
Civil, Chemical and Industrial Engineers
Designs of Industrial Plants. Modernizing, Investigations and Reports on Manufacturing and Mining Propositions. Specialists on Feldspar, Talc, Silica, Kaolin, Bauxite, and similar minerals.
PHILADELPHIA, PENNSYLVANIA

BURGESS & LONG
Chemical Engineers & Analytical Chemists.
General Chemical Analyses. Recovery and Disposal of Manufactural Wastes and By-Products. Technical Control of Manufacturing Industries. Consultations as to Processes, Products, etc. 8 E. Long Street COLUMBUS, OHIO

FROEHLING & ROBERTSON
Richmond Testing Laboratory
Chemists and Economic Geologists
Analyses of all kinds. Waters and fertilizers specialties. Standard Cement Testing Examinations and reports on mineral properties.
813 East Franklin St. RICHMOND, VA.

PITTSBURGH TESTING LABORATORY
General Inspection
Specialties—Cement and Road Materials, Cast Iron Pipe, Chemical and Physical Tests.
CINCINNATI BIRMINGHAM DALLAS
CHICAGO PITTSBURGH NEW YORK

THE PICARD LABORATORIES
Analytical and Consulting Chemists
Industrial Problems, Municipal Sanitary Work and Testing of Municipal Supplies. Analysis of Foods, Cottonseed Products, Fertilizers, Minerals, Fuel and Water—Chemical and Bacteriological.
1011 First Avenue BIRMINGHAM, ALA.

Robert W. Hunt Jno. J. Cone
Jas. C. Hallsted D. W. McNaugher
ROBERT W. HUNT & CO.
Engineers
INSPECTION AND TESTS. Steel and Cement for Bridges and Buildings. Railroad Material and Equipment. Chemical, Physical and Cement Laboratories.
Chicago New York Pittsburgh St. Louis
Dallas New Orleans Los Angeles San Francisco

WILEY & COMPANY
Analytical and Consulting Chemists
Experts on Fertilizer Materials, Coal, Greases, Foods, Drugs, Dairy Products, Chemical and Bacteriological. Examinations of Water for Domestic and Manufacturing Purposes.
7 S. Gay Street BALTIMORE, MD.

MINES EFFICIENCY CO.
Geological, Mining and Metallurgical Engineering.
Examination and Exploration of Mineral Properties. Design and Erection of Concentration Plants. Manganese and Iron Ore Problems a Specialty.
709 Alworth Bldg. DULUTH, MINN.
1801-185 Broadway NEW YORK CITY

LUDWIG A. THIELE, Ph.D.
Chemical Engineer
Mem. Am. I. Ch. E.
Design and Construction of Chemical Plants, Sulphuric Acid Plants (Multiple Contact System), Fertilizer Plants, Extraction Plants (volatile solvents), Supervision, Investigation of Plants, Processes and Propositions.
Hartman Bldg. COLUMBUS, OHIO

THE DORR COMPANY
Metallurgical and Industrial Engineers
Research, consultation and design of plants in connection with Chemical and Hydrometallurgical processes, prevention of stream pollution, trade waste treatment, etc.
17 Battley Place DENVER NEW YORK LONDON

N. A. GILBERT
Consulting Chemical Engineer
Located in the center of the Graphite milling district of Alabama. Samples drawn and analysis, without delay.
ASHLAND, ALA.

GEORGE C. DAVIS
Analytical and Consulting Chemist
Analyses of Iron, Steel, Ores, Alloys, Coal, Sand, Clay and Cement.
59 South Tenth St. PHILADELPHIA, PA.

FOUNDED 1910
THE INSTITUTE OF INDUSTRIAL RESEARCH
(INCORPORATED)
Chemical and Engineering Laboratories
Consulting Chemists and Chemical Engineers
Plant Design and Construction WASHINGTON, D. C.

ARTHUR D. LITTLE, Inc.

Our organization of chemical engineers has been active and successful in the development of many industries. We provide chemical control of manufacturing establishments in the interest of economy in purchases and in operation. Have had good results in the utilization of many kinds of waste products. Familiar with Southern conditions. Correspondence invited and visitors cordially welcomed to inspect our facilities for research, control and testing.

93 Froad Street

BOSTON



We test foundations for buildings, bridges and dams. We Prospect coal and mineral lands in any part of North and South America.
WE LOOK INTO THE EARTH
By use of Diamond Core Drills
PENNSYLVANIA DRILLING COMPANY
2623 Whithall Bldg., New York. 80 Carson St., Pittsburgh, Pa.
Phone Berton 5593 Phone Hemlock 306

INDUSTRIAL NEWS OF INTEREST

New Location of Offices.

The Arkansas Light & Power Co. announces that its general offices are now situated at Pine Bluff, Ark. They were formerly at Arkadelphia. H. C. Couch is president, J. H. Meek, vice-president, and J. L. Longino, secretary and assistant general manager. This company owns and operates various light, water and power properties at different places in Arkansas.

New Man on Zelnicker Staff.

The Walter A. Zelnicker Supply Co. has just secured the services of L. B. Moses, who joins its organization as second vice-president, in charge of the rail department, with headquarters at the company's main offices in St. Louis. Mr. Moses has been closely associated with the rail trade since 1908. Since 1911 he has been sales manager of the Kettle River Company of Minneapolis.

To Make and Sell Metal Signs.

The Lylesigns Manufacturers Association has been formed at Chicago to manufacture metal road and street signs. It includes companies which have heretofore specialized in the manufacture of metal culverts and other products employing corrugated metal sheets. It will make and market the signs. Ray Frazer of Minneapolis, Minn., is president, and Howard See of Atlanta, Ga., is secretary.

Open Southern Office.

Phelan, Quinn & Company, specialists in new and used textile machinery, whose main office is at 161 Devonshire St., Boston, with branch offices in Fall River and New Bedford, Mass., have opened a branch office in the Realty Bldg., Charlotte, N. C., to handle to better advantage their constantly growing southern business. The firm specializes in cotton machinery, and S. Nelson Lattimore, a practical cotton-mill man, will be in charge of the Charlotte office.

Desires to Act as Agent.

The Machinery Exchange Co., Bienville and David Sts., New Orleans, La., wishes to act as agent for a good internal combustion engine which uses crude oil for fuel, also for locomotive cranes, hoisting engines and similar equipment. The company expects to employ more men on Jan. 1 and to work the trade very closely and it will communicate with any good manufacturers who can furnish the goods mentioned. Furthermore, the company would like to have the agency at New Orleans for some good boiler manufacturers.

To Make All Kinds of Welded Chain.

The Virginia Chain Co. has completed its building at Parkersburg, W. Va., and has purchased and installed all the machinery. The factory is now ready to operate and the company expects to have manufacturing under way within a few days when it will be prepared to take on a considerable tonnage of hardware chain, including proof coil chain, steel loading chain, crane and dredge chain, and all other styles of welded chain. The company is also figuring on making a patent anti-skid chain for use on automobile trucks for which a heavy demand is predicted.

"Sanisep" Sewage-Disposal Systems.

The School Board of Mobile county, Alabama, has awarded a contract to the Central Products Co. of Wilmington, N. C., to equip a majority of the rural schools in that county with the "Sanisep" sewage disposal systems manufactured by that company. Among other recent installations of these systems are the following: Wake county (North Carolina) rural schools; Southern Manufacturing Company, Athens, Ga.; Arcadia Mills, Spartanburg, S. C.; Nims Manufacturing Company, Mount Holly, N. C.; Barrow County Cotton Mills, Winder, Ga.; United States Coal & Coke Co., Gary, W. Va.; Crystal Block Mining Co., Welch, W. Va.; Greensburg-Connellsburg Coal Co., Greensburg, Pa.; H. C. Frick Co., Co., Palmer, Pa.; Bessemer Coal & Coke Co., Pittsburgh, Pa., and the Clinchfield Corporation, Dante, Va.

TRADE LITERATURE

Interesting to Oil Mill Men.

A little book of 100 pages, whose title, "Practical Points for Oil-Mill Managers and Superintendents," accurately describes its contents, has just been issued by the Buckeye Iron & Brass Works of Dayton, Ohio, which makes the Buckeye line of oil-mill machinery, including crushing rolls, presses,

cookers, formers, cottonseed cleaners, reels, linters, hullers, shakers, separators, etc., besides valves and many other pipe fittings. This plant also manufactures tobacco cutting machinery, and castings of different metals. All of these are accurately illustrated. The section relating to oil-mill management and superintendence is complete and very valuable and enlightening. The book is issued with the compliments of the company.

New Filler for Brick Pavements.

A new filler for vitrified brick pavements is announced by the United States Asphalt Refining Co., 90 West St., New York. It is called Aztec Bitose Filler, and it is described as "an improved form of asphalt filler produced especially for filling the joints in vitrified brick pavements. It is designed to waterproof the pavement and completely fill the interstices, making the pavement much less noisy than when a rigid filler is employed." It is also stated that this filler sets quickly, and the pavement, can, therefore, be opened to traffic within a few hours after completion. It is further noted that this filler is composed of 100 per cent. natural asphalt, refined and treated under special processes, and that it is not mixed, blended or fluxed with any other material.

Du Pont Products Described.

Another Du Pont Products Book has just been issued by E. I. du Pont de Nemours & Co., and its associates, Du Pont Fabrikoid Co., Du Pont Chemical Works, the Arlington Works and Harrisons, Inc. It lists all the products of the above concerns and describes their uses. It contains information in which nearly everyone will be interested. This large firm is constantly expanding its industrial activities along constructive lines, and the information contained in the new Products Book is the last word, but, of course, it takes time to print such a book, hence if any new products were put on the market since the book was started they may not be listed, but if you are interested in anything you think Du Pont should manufacture, write the home office at Wilmington, Del., or the nearest branch office. Should any of the mentioned products be new to you, they will be pleased to furnish you with additional information or to supply special literature relative to the particular product in which you are interested. A new Products Book will hereafter be issued at least once a year.

"Indico" Ice-Making Machinery.

The De La Vergne Machine Co., 1215 E. 138th St., New York City, has issued a handsome booklet, presenting excellent illustrations of various parts of its factory, which will be of interest to its customers as well as to its officers and employees. Another publication is a bulletin devoted to a description of its ice-making machinery, which, it is said, is "fool proof," and produces a uniform quality of the highest grade raw water can ice with a minimum cost of maintenance. It also says: "Operating difficulties are the weak points of the average raw water ice plant. They produce irregular operation and an uncertain percentage of merchantable ice. Some days the product is good; other days it is all white or partly white. The danger of air-stoppage always exists. A momentary discontinuance of the air supply means white ice. The 'Indico' system, by virtue of its patented features, entirely overcomes these operating difficulties."

Link-Belt Drive in Clay Working.

"The Ideal Drive for Clayworking Machinery" is described in Book 310, issued by the Link-Belt Co. of Philadelphia, Chicago and Indianapolis. It says: "The demand for increased production has made it imperative that there should be no slip or loss of power—no inefficiency—between the prime mover and the driven machine or line shaft. Increased production means that each unit must work at top efficiency. Where could a better start be made than right at the point where power is transmitted from the motor to the machine. * * * Link-Belt Silent Chain combines the advantages of the belt and gear drives—it maintains over 98 per cent. efficiency; it is flexible, compact, durable; operates on short or long centers equally well, and when enclosed in our dust-proof, oil-tight casing, makes a most desirable 'safety-first' medium for the efficient transmission of power." Adequate illustrations and descriptions show the application of this drive to clayworking.

Problems Confronting the Coal Trade

HOW CAN DISREGARD OF ARBITRATION AGREEMENTS BE MET?—LEGISLATIVE ENACTMENTS SHOULD BE ADAPTED TO NATURAL LAWS—SUGGESTED METHODS FOR RELIEVING TRANSPORTATION TROUBLES.

By F. B. HUBBELL, Baltimore, Md.

In a previous article there was outlined the growth of coal mining in the United States and the increasing difficulties in its growing inefficiency, with demands for shorter hours and increased pay.

In 1909 the writer was informed by a friend in Western New York of an impending strike of coal miners, and the organization leaders in anthracite and bituminous mines planned to make it universal so as to tie up all transportation and manufactures. It came, and was almost a success. Just as the president of the largest of the anthracite coal companies had the strike under control Government arbitration was ordered. The arbitrator, honest and honorable, made a decision of concessions, which the defeated strike leaders immediately accepted. It has never been lived up to by the union. The only thing accomplished was the continuance of the union.

There never has been, according to Dr. Robert R. Porter, formerly director of United States Census, "a leader in any labor union that was a native-born American, the officers of unions being British-born, the majority of their followers being foreign-born, with a minority of native-born Americans, many of the foreigners unnaturalized."

In 1911 the great strikes in Great Britain occurred, coal miners, dock men, freight handlers and firemen on steamships almost tying up the commerce of the British Isles for weeks, with rioting in Wales, Liverpool and London.

I had the good fortune to travel with a leader of one of the unions, en route to Wales to attend a conference between union officers and mine owners. He was a leader, had good information and knew the whole union situation in the United States, and remarked, "we nearly won three years ago, and next time we will."

How can this disregard of arbitration agreements be met? Is there no longer truth and honor in man, especially among miners? Those in Illinois were out the past month of October some three weeks, or practically the loss of product for a month, at a period when their production was imperative, totally disregarding any feeling or interest in the needs of the consumers of their production, let alone patriotism in their country's needs, or the sufferings of families deprived of getting their winter's fuel before the close of navigation.

The daily press telegrams state that the miners have agreed to go to work, but a new selfishness is developed in the mine operators asking the Government coal commission to compel the trunk-line railways to depend on their fuel supply from the Pittsburgh coal district and leave Chicago and Milwaukee territory to Illinois operators. The consumers of coal should have considerable to say, as the per cent. of ash in Illinois coal is greater than Pittsburgh and West Virginia coals. With scarcity of labor this is an item to be considered. Cars must be loaded to such points as will insure the longest loaded haul and get a long loaded haul back for wheat and corn, when box cars are used, or else a heavy car shortage will occur. In the Middle West fully 30 per cent. of coal traffic is handled in box cars.

The Eastern roads are mixing coal, anthracite dust and bituminous ground coal for fuel, using mechanical feeders on their latest type of locomotives. This is a practical 10 to 15 per cent. saving in fuel. Electricity is playing an important part in fuel saving by use of water-power. Nevertheless, where large turbines are used, the cost of production of electricity with coal as a fuel is cheaper than water-power.

In treating the coal question there must be an absolute divorce between the bituminous and anthracite. The conditions of production, preparation and distribution to consumer are so entirely different that they cannot be treated jointly.

A bituminous coal miner or digger is paid, if driving entry, by the yard; also paid for piecework in turning rooms. A digger in a room is paid by the ton, in some regions by run-of-mine ton, in other sections by lump coal over 1 1/4-inch screen; for the latter he gets higher pay, as nut and slack coal are free. This is the most

equitable for the mine owner, miner and consumer, as such coal is sold to retail dealers for household uses, where anthracite coal or good coke cannot be procured.

Run of mine goes to steel works, brick-makers, rolling mills, railroad and steamships for bunker use; slack and nut is used in making coke, etc. The long wall mining is also paid on tonnage basis. A miner making his own hours will often go into the mine at midnight, with his helper or "buddy," cut under and wedge down or cut under and side cut and fire down and load up in mine cars for drivers to haul out during the day, finishing by 7 o'clock in the morning, when he will go home, eat breakfast, go to sleep, get up, eat dinner at 1 o'clock and loaf around until supper time, then go to lodge meeting, store or church. Other miners will go in at other hours, but they only work about seven hours in digging coal, and produce enough to keep drivers, weighers and tipple men busy for 10 hours.

The consumption of coal is continuous day and night, seven days a week in residences, hotels, apartment-houses, gas and electric-light plants, coke ovens and by-product plants. Steamships never stop from the moment they cast off at New York until Liverpool is reached. During this war period all furnaces, plate mills, factories, etc., are running day and night.

The fundamental law is from Apostle Paul. Each member of the body has its particular use, and each individual is a unit to fit in the body politic. So in certain occupations you must from their nature adapt your machinery and labor to certain natural and mechanical laws. Adapt our legislative enactments to these natural laws, which are divine, and we get harmony.

Repeal these hard and fast eight-hour-a-day-work laws! Let each trade or occupation make its own hours of labor! Stop listening to so-called reformers, theorists, college professors, school teachers, male and female! Get information from employers or owners and employees!

To meet the fuel demand I believe that, taking as an example the Chesterfield coal field, on the Southern and Norfolk & Western Railway systems, the State of Virginia should, on account of its value as a coal field which should be producing, appoint a commission. No one owner is able to mine for any great length of time on account of the gas in the mine, causing fires from gas, that have to be drowned out. By working this field as a unit, each receiving a royalty proportioned to tonnage, contracts for regular supply to furnaces, etc., could be made. The slack could be worked on the ground in by-product ovens, their gas sold in Richmond, Petersburg and Farmville; the coke shipped for fuel in residences, taking the place of anthracite, or for smelting; the tar and ammonical products for synthetic products, toluol, gasoline, camphor, saccharine, analine dyes and fertilizers.

All outside labor at mines should be a 10-hour day; inside for digging coal-room and entry work, two shifts of eight hours each; no work Sundays, unless pumping or repairing machinery or cleaning boilers.

In transportation I believe rates should be made as of March 1 of each year, on bituminous coal a minimum rate per ton of 2000 pounds, and on the first of May an increase of five cents per ton, first of July a further increase of five cents per ton, first of September an additional increase of five cents per ton, first of November eight cents additional, January first additional ten cents per ton. Where such coal is shipped to by-product plants, electric light, gas or power plants or public utilities, the rate should be uniform or rate in use July 1 of each year. This would distribute shipments and prevent car shortage.

Another vital point in transportation is the character of cars. The large 80 to 100-ton capacity cars for export or Great Lake coal shipments, to furnaces, power and public utilities, is proper; but another class, the small foundry or mill, the farmer who hauls in a load of wheat or grain to be shipped and takes back a load of coal for winter fuel, these need a gondola of

about 15 tons capacity. These little fellows should have a showing. This character of car could also be used for stone, ore, rail and machinery for farm use, but would have to be so strong as to stand the buffeting between the heavier cars.

The inside waterways along the Atlantic coast should be connected up by short canals, especially between Chesapeake and Delaware bays, the Delaware and Raritan rivers, with the Raritan Bay. This would place the bituminous coals of the Virginias, Maryland and Pennsylvania into the great manufacturing plants of New York and New England, and by using the waterways of New York State to the Great Lakes, Duluth, Chicago and Milwaukee, and the products of the Northwest and North to the South Atlantic ports and relieve congestion at terminal points of the seaboard cities.

A short canal from the Tennessee River to the Black Warrior and Cahaba rivers would open coal fields to the Mobile and Gulf trade. Such a canal would partially relieve the recurring annual floods in the lower Mississippi by diverting surplus waters.

To give practical aid to the railway situation I would suggest that the Government build a number of cars for coal, lumber and munitions transportation, as was done during the Civil War, to be used in the transportation of material for the Army and Navy, the Government to receive a per diem for use of the cars from the railways over which they will be used. All would be benefited. Also let the Government furnish motive power to hire to the railways needing same. When the war ends, both cars and engines could be valued under master-mechanics' rules and sold.

Increasing Shortage of Coal Cars.

Losses in coal production, according to the United States Geological Survey, due to lack of cars, have been increasingly severe in the past month, rising from 11.5 per cent. in the week of October 20 to 14.8 per cent. for October 27, 15.3 per cent. for November 10, 19.4 per cent. for November 17, 20.2 per cent. for the week ended November 24.

The Survey reports:

"Inadequate transportation facilities thus remain overwhelmingly the dominant factor limiting the output of soft coal. Throughout Illinois, Indiana, Ohio and Eastern Kentucky the toll exacted by shortage of cars increased in severity. Car shortage in Ohio was especially severe. For the State as a whole losses due to this factor amounted to 30.8 per cent. of the capacity. Car shortage became more acute in the Pocahontas and New River fields of West Virginia, where losses due to this factor rose from 19.5 per cent. in the week ended November 17 to 20.6 per cent. Even the Cumberland-Piedmont field, ordinarily well supplied with cars, lost 15.3 per cent. of its full-time capacity because of inadequate transportation.

"Western Pennsylvania, however, recovered in part from the extreme depression of the week before. Losses due to car shortage fell in the Pittsburgh district from 28.0 per cent. to 22.1 per cent. of the full-time capacity. Conditions in central Pennsylvania and the Winding Gulf, Junior-Philippi and Fairmont regions of West Virginia underwent little change. Losses due to car shortage remained severe in the high volatile fields of Southern West Virginia, where operators failed to realize 36.4 per cent. of their possible output through lack of cars alone.

"A sharp decline in the ratio of tonnage produced to capacity was reported during the week of December 1 by representative beehive coke producers in the Connellsville, Greensburg and Latrobe districts of Pennsylvania. Fifty-eight operations reported a production of 273,910 net tons, 62 per cent. of their combined capacity as rated by the railroads. The unusually high losses were attributed not to the effect of the Thanksgiving holiday, but to the lack of coke cars. Losses due to this cause rose from 15.6 per cent. in the preceding week to 23.5 per cent. of the rated capacity. Losses due to shortage of yard labor were reported as 0.3 per cent."

An addition will be built by the Tipton Cotton Mills of Covington, Tenn., which contemplates changing from sheeting to yarn production. The plant has 6500 ring spindles.

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